

Psychological Bulletin

PSYCHOLOGY IN SOUTH AMERICA¹

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Psychology in South America, and indeed in all of Latin America, is far less independent of other disciplines than in the United States. Among the many South American scientific periodicals there is not one devoted to general psychology,³ although there are many journals for various combinations of abnormal psychology, educational psychology, neurology, and criminology. How are we to account for this lack of independence? The influence of France and especially of French positivism immediately suggests itself. "Until recently," writes Risieri Frondizi, "positivism was dominant in Latin American intellectual circles" (84). Now positivism, at least according to its founder, has no place for an independent science of psychology. The subject matter of such a discipline is either a part of physiology or of sociology (90). If, however, scientific psychology is really either physiology or sociology, who is to be put in charge of psychological institutes and laboratories? Not psychologists in the Wundt-Külpe tradition, but medical men or social scientists.

This is, in fact, largely what has occurred in Latin America. The first laboratory of experimental psychology in the Argentine was organized in 1898 at the Colegio Nacional in Buenos Aires by Horacio Piñero, a professor of psychology at that institution. In 1901 Piñero was chosen to initiate a course in experimental and clinical psychology in the Faculty of Philosophy and Letters of the University of Buenos Aires and to found there the second laboratory of experimental psychology in the Argentine. The following year

¹ The authors have been unable to gain access to some of the South American psychological literature. The present survey is consequently exploratory rather than exhaustive and definitive.

² The authors wish to thank Mr. Arthur Szathmary for assistance in the preparation of this article.

³ Personal communication from Professor Honorio Delgado, of Lima, Peru.

he became titular professor of psychology in this faculty. Piñero was not an academic psychologist (81); he was a professor of physiology in the Faculty of Medicine. Let us consider, also, who was chosen to represent the Argentine Republic at the Fifth International Congress of Psychology at Rome in 1905. It was the editor of the *Archivos de Psiquiatría y Criminología*, José Ingenieros, who was to organize, two years later, the Institute of Criminology of Buenos Aires, including a department of experimental and clinical psychology. Such facts as these go far to explain the lack of independence of psychology in South America.

Positivism, moreover, has had another effect on psychology in South America—a rather surprising one: it has strengthened the status of philosophical psychology. Problems difficult to treat by means of laboratory techniques, instead of being assimilated by an independent scientific psychology, have been left in the field of philosophy. The result is a relatively large amount of psychological writing by men whose training, interests, and methods are definitely philosophical.

The decentralization of psychological research in South America has an important consequence for North American psychologists. In surveying the field we must look to the nature of the material available rather than to the labels applied to it, or to the titles or classifications of the men who contributed it. In this paper we shall survey psychological research, not research in psychology or research by psychologists.

ARGENTINA

As in other countries, psychology in the Argentine began by being a nonexperimental philosophical discipline. In 1898, as has been pointed out, the first laboratory of experimental psychology was established at the Colegio Nacional. This constituted a bifurcation, however, rather than a transformation. Philosophers of the universities continued to play a considerable role in the teaching of psychology and do so to the present day.

Two outstanding contemporary representatives of the philosophical tradition in Argentine psychology are Coriolano Alberini and Francisco Romero. Alberini, professor of philosophy and director of the Philosophical Institute at Buenos Aires, also teaches psychology at that university. He is one of the leaders of a current Argentine reaction against positivism. Of the Argentine disciples of Comte he writes: "When they become untrue to Comte

they degenerate to Haeckel, and when they are orthodox they destroy the spirit of science and philosophy" (2, 3). Alberini represents a spiritualistic tendency more in accord with Kantianism. He speaks highly of Bergson, Croce, Husserl, Dilthey, Heidegger. Among Alberini's works is a beautifully written criticism of pragmatism (1), which closes with this deft statement: "Pragmatism has the characteristics of a skepticism for all but action, of a philosophy of consolation. To our way of thinking it neither moves nor consoles."

Francisco Romero also represents a reaction against positivism. This attitude is well represented in his work on the *Philosophy of the person* (193), in which he stresses the spiritual component of personality. Romero is far more of a philosopher than a psychologist, but his concern with epistemological problems brings him often into contact with psychology (192, 194-198).

Today there are in the Argentine nine important laboratories of experimental psychology. A *vue d'ensemble* of these institutions is afforded by the following table:

General Psychology:

Research Laboratory
Training Laboratory

University of Buenos Aires
National Institute of Secondary Teaching, Buenos Aires

Educational Psychology:

Psychiatry:

Applied Psychology:

Vocational Guidance
Labor Problems

Argentine Social Museum, Buenos Aires
Faculty of Economic Sciences, Buenos Aires

Military Problems

Aviation

Army

Navy

El Palomar, near Buenos Aires

Military College, near Buenos Aires

Rio Santiago, near La Plata

The Laboratory of Experimental Psychology in the Institute of Psychology of the Faculty of Philosophy and Letters of the University of Buenos Aires, founded in 1901 by Dr. Horacio G. Piñero, was the second laboratory of experimental psychology to be established in the Argentine. (The laboratory of the Colegio Nacional of Buenos Aires was founded three years earlier, but no longer exists.)

The first head of this laboratory was Dr. Eugenio Marín, who served in this capacity from 1901 to 1905. He was followed in turn by Professor Guillermo Navarro (1905-1912), Dr. Pastor Anargyros (1912-1921), Dr. Juan Beltrán (1922-1926), and Dr.

José L. Alberti (1926-), incumbent in 1935. Dr. Alberti was assisted, until 1935, by Dr. Leon Jachesky, "Encargado de trabajos practicos."

Research done in the laboratory is published largely in the *Annales del Instituto de Psicología de la Facultad de Filosofía y Letras de la Universidad de Buenos Aires*, under the editorship of Dr. Enrique Mouchet. The teaching of experimental psychology at the University of Buenos Aires was in the hands first of Dr. H. G. Piñero (1902-1918) and then of Dr. Mouchet (1919-).

The Laboratory of Experimental Psychology in the Institute of Psychiatry of the Faculty of Medicine of Rosario (Sante Fé) was organized by Professor Arturo Mó in 1922, with the collaboration of Dr. José L. Alberti, who, until 1932, directed the practical work. Since 1927 this laboratory has been under the direction of Dr. Lanfranco Ciampi. Experimental psychology there is a science auxiliary to the study of the genesis of psychic disturbances, and research is largely concerned with expressive reactions of abnormal children and adults. The Institute of Psychiatry has published a quarterly periodical since 1929, the *Boletín del Instituto Psiquiátrico de la Facultad de Ciencias Médicas de Rosario*, under the direction of Dr. Ciampi.

Among the outstanding experimental psychologists in the Argentine should be mentioned Mouchet, Alberti, Beltrán, Loudet, d'Oliveira Esteves, and Palacios.

Enrique Mouchet, the present director *ad honorem* of the Institute of Psychology of the Faculty of Philosophy and Letters of the University of Buenos Aires, has wide interests. His contributions concern sensation and perception, with special attention to these processes in the blind (139-141, 143, 144, 146), emotion (142), thought and language (136-138, 145), and the neurology and psychology of aphasia (133-135). He is best known for his emphasis on coenesthesia as the central nucleus of the entire conscious life and as an important factor in states of depersonalization and denial of reality, and for his view that cutaneous receptors yield distance perception in the blind.

Professor Mouchet's contributions to psychology also include his planning and administration in connection with the Institute of Psychology. He has sought, on the one hand, to make the field of the Institute extremely broad, "recognizing the relative effectiveness of all methods—experimental, pathological, of experimental introspection, of pure introspection, genetic, psycho-

analytic" (81). On the other hand, he has sought to make the Institute the center of psychological research in Latin America, uniting "in the solidarity of work all the investigators of psychology of the Continent" (81). The extent to which this latter aim has been achieved is hard to judge, but several graduates from the Institute are teaching psychology in other countries of Latin America.

José Alberti is the chief of the Laboratory of Experimental Psychology of the Institute directed by Mouchet. He entered the Institute in 1919 and has held his present position since 1926. More inclined towards laboratory psychology and physiological psychology than Mouchet, his principal contributions have been on attention (6), reaction times (5), G.S.R. (4, 7), and electroencephalography (8).

Juan Ramón Beltrán, adjunct-professor of legal medicine in the Faculty of Medicine, has been closely associated with the development of psychology in the Argentine. In 1921 he assumed temporary charge of one of the principal courses of psychology of the Faculty of Philosophy and Letters, in which he is at present "extraordinary professor." He also teaches psychology at the Colegio Nacional Central and at the Military College. Beltrán's interests, though extremely broad, have tended to center on psychiatry (24-26, 29-33, 37-41), social and sociological psychology (23, 28, 36), and aptitude testing (21, 22, 27, 35). He has also published a paper on synesthesia (34). Dr. Beltrán has sought to develop extensively the teaching of psychology at the Colegio Militar both as regards general psychology and as regards aptitude testing (the latter in the Laboratory of Experimental Psychology). The tests used cover not merely sensory and simple motor aptitudes, but such "higher order" variables as "emotionality."

Osvaldo Loudet (1889-) is both a psychiatrist and a criminologist. This combination of interests appears already in the title of his thesis presented to the Faculty of Medicine of Buenos Aires: *La pasión en el delito (Passion in crime)*. He is vice-rector of the Instituto Libre de Segunda Enseñanza in Buenos Aires, adjunct-professor of clinical psychiatry at the Faculty of Medicine of the National University of Buenos Aires, extraordinary professor of experimental and physiological psychology in the Faculty of Philosophy and Letters of that university, titular professor of clinical psychiatry at the Faculty of Medicine of the National University of La Plata, director of the Institute of Criminology

founded by José Ingenieros, and the director of the *Revista de Criminología, Psiquiatría y Medicina Legal* (209).

Loudet's publications deal principally with psychiatric problems of crime and delinquency (91-97, 99). He edited the proceedings of the first Latin-American Congress of Criminology, at Buenos Aires, of which he was president (100). He is also interested in the relation of temperamental and constitutional type to delinquency and has developed techniques for taking the case histories of criminals which emphasize temperamental and constitutional specifications (98). Finally, Loudet has concerned himself with the determination of an "index of dangerousness" of criminals (101, 102).

Julio V. d'Oliveira Esteves, surgeon subinspector of the Argentine Navy, chief of Medical Service of the Naval Aviation of Argentine, is in charge of the Laboratory of the Navy for Aptitude Examinations. He considers himself a disciple of Beyne of Paris, Flack of London, Herlitzka of Turin (now in Buenos Aires), and Patrizi of Bologna. D'Oliveira Esteves, besides his position in the Naval Medical Service, is a physician at the National Hospital for the Insane. A number of his earlier writings deal with purely psychiatric problems (150-155). Besides these, however, he has published during the last decade a steady series of articles on the application of psychological techniques to the selection of personnel for the Navy, particularly of aviation personnel.

Measurement of reaction times has received special attention by d'Oliveira Esteves. In 1927 he described a very simple apparatus for recording reaction times (148) and a particular method of calculation of their medians (149). In 1932 (156) he pointed out that, to be significant from the psychotechnic point of view, a measure of reaction time must indicate not only the time from stimulation to initiation of response but also the time from initiation of response to its termination. Time from stimulation to initiation of a response may be short, yet ability to repeat movements rapidly may be slight. Thus, one case which he mentions had very short reaction times from stimulation to initiation of action, yet could not be brought to receive Morse code at a reasonable rate. Two recent papers are devoted to results obtained from candidates for aviation with measurements of reaction times in this wide sense (173, 174). D'Oliveira Esteves has also recently proposed the use with such candidates of a measure of the ability to do simultaneously a mental and a physical task (175). He dis-

cusses many other procedures of pilot selection in a series of articles published in the last decade (157-162, 165-168, 170, 172) and has also dealt with techniques for the selection of athletes (164) and with problems connected with the establishment of air-ambulance service (163, 169, 171).

Alfredo Palacios is not a psychologist, but a professor of labor legislation at the University of Buenos Aires and a professor of judicial and social sciences at the University of La Plata. He occupies an important place, however, in the study of industrial fatigue. Profoundly interested in the welfare of workers, Professor Palacios was instrumental in establishing a psychophysiological laboratory for the experimental study of work in the Faculty of Law of the University of La Plata, "the first step of this sort in the world," according to Patrizi (176). He was also a pioneer—certainly the first in Argentina—in the study of fatigue psychophysically, *in vivo*, in industrial plants, rather than in university laboratories. Concerned with the desirability of the eight-hour day, Palacios, assisted by José Alberti, studied in a state workshop the fatigue of workmen working on an eight-hour basis. As measures of fatigue he used, besides the production figures, the ergographic technique of Mosso and the measurement of attention according to the method of Patrizi. The results of this research, together with a general review of fatigue in industry, were published in his book, *La fatiga y sus proyecciones sociales* (176), which to date has had three printings (1922, 1924, 1935). Among Palacios' more recent contributions are a study of creative activity and a note on education in Mexico (177, 178).

Emilio Mira y López, though born in Cuba and long associated with psychology in Spain, should be mentioned in connection with psychology in the Argentine because he is at present professionally active at the University of Buenos Aires. Mira's field of interest is extremely wide. He holds a medical degree, was director of the Institute of Physiology of the Faculty of Medicine of Barcelona from 1924 to 1926, has practiced psychiatry and written a text on that subject (117), has written a text on legal psychology (112), and has been very active in the field of aptitude testing and vocational guidance. (He was long head of the Institute of Professional Orientation at Barcelona and contributed some 25 articles in this field between 1920 and 1930.) Mira was elected president of the Twelfth International Congress of Psychology which was to have been held in Madrid in 1936.

A bibliography of Mira's publications prior to 1932 (67 titles) may be found in the *Psychological register*, Volume 3 (147). His contributions since that time include, besides the texts mentioned above, a book on certain modern psychological problems (125) and articles on psychopedagogy (111, 116, 118, 120), on personality tests (115, 119, 123, 126), and on the role of psychology in the Spanish war (121, 122, 124).

Finally, another noted contributor to psychology who, though of Spanish birth, is now active in Argentina, is the physiologist, Gregorio Marañón y Posadilla (1887-). His experiments on the consequences of injection of adrenalin in human subjects were an important point of departure for the investigations of Landis, Hunt, Cantril, and many other North Americans on the relation of adrenalin to emotion. Marañón published in 1938 in Buenos Aires a work on endocrinology (109) which develops on experimental grounds a number of ideas concerning emotions not current in the North American psychological literature. He emphasizes in particular the role of the pituitary in the mechanism of emotions.

BRAZIL

The decentralization of psychological research, characteristic of South America in general, is particularly marked in Brazil. This is due in part to the French influence. It is also due to the recency of establishment of universities in that country. The University of São Paulo was not founded until 1934; that of Rio, not until 1935. Prior to 1934 research and graduate education were confined to relatively independent, generally utilitarian faculties and to institutions connected with religious bodies (104). In these small and specialized educational establishments psychology was heavily colored by the complexion of the institution and assumed the status of an auxiliary method rather than of an independent discipline.

The lack of autonomy of experimental psychology is well illustrated by its development at Rio de Janeiro. In 1923, Dr. Waclaw Radecki, a Polish psychologist, arrived at Rio and set out to develop there the study of general psychology, especially a laboratory of psychology (56). The point to note, however, is that this laboratory was established in a state colony for psychopathic patients. Its official designation was Laboratorio da Psicologia na Colonia de Psichópathas no Engenho de Dentro. By 1932 the staff of this laboratory included Radecki as director, Drs. A. de

Silva Brêtas, Jayme Grabois, and Agnello Ubizara Rocha, Mrs. Halina Radecka, and Miss Lucille Tavares. Its pre-eminent place in the Brazilian psychological world at that time is indicated by the following fact: of 14 psychologists listed by Henrique Roxo in the 1932 edition of Murchison's *Psychological register* (147), six are Radecki and his assistants, and a seventh is a former assistant of the laboratory, Nilton Campos.

In 1932 the Instituto da Psichologia da Assistencia a Psychópathas of Rio de Janeiro was formed, with Radecki at its head. This institute, which became a part of the University of Rio de Janeiro, is apparently a continuation of the former laboratory of psychology of the colony of psychopaths. Radecki left the Institute in 1933 for La Plata in the Argentine. Two of his former assistants, however, are on the staff of the Institute: Nilton Campos, who is director, and Dr. Jayme Grabois. Nilton Campos is a follower of the Gestalt and psychoanalytic schools. His *Psichologia da vida affectiva* (57) has a preface by Wolfgang Köhler. In an inaugural address before the Sociedade de Psichologia de São Paulo he expressed his adherence to the principles propounded by Köhler, Koffka, Wertheimer, and Stern and his acceptance of much of the psychology of Freud (58). The bibliography of Campos prior to 1932 will be found in the *Psychological register*, Volume 3 (147).

There is another laboratory of psychology at the University of Rio, the Laboratory of Experimental Psychology of the Psychiatric Clinic, under Dr. (med.) Enrique de Figueiredo Sampaio.

An outstanding illustration of the application of experimental psychology to an applied problem such as aviation may be found in Rio. A completely equipped psychological laboratory has been established at the center for aviation training near Rio in the Departamento Medico da Aeronautica do Exercito, which is under the direction of Dr. A. Godinhò dos Santos. The psychologist in immediate charge of the work is Dr. A. Brêtas. The French influence is seen in the methods of testing as well as in the equipment. Comprehensive studies have been made of the various sensory functions involved in flying, especially reaction times, perception of change in bodily position, visual acuity, depth perception, and auditory acuity, as well as simple and complex reaction times and more complex mental functions. These data have been studied with care from the point of view of pilot selection and the problems of training in aviation. An outstanding feature of this insti-

tute is the harmonious and intimate way in which its various disciplines work together under one roof on the common problem of aviation medicine—that is, clinical medicine, ophthalmology, neurology, psychiatry, physiology, and experimental psychology. This feature is not often observed in North American institutions working on specialized problems, and there are no such institutions in aviation medicine on this continent with the possible exception of the one recently organized in Toronto at the Banting Institute.

The Brazilian psychological laboratory which most closely approximates the autonomy of such laboratories in the United States is the one in the School of Philosophy, Science, and Letters of the University of São Paulo. Its head is Noemy da Silveira Rudolfer, who also teaches educational psychology in the same school (206) and social psychology in another division of the university, the Escola Livre de Sociologia e Política. Cecilia de Castro e Silva also teaches social psychology at that institution.

There are a number of other institutions in São Paulo where experimental and clinical psychology are represented: the Instituto de Organização Racional de Trabalho, where Dr. Aniela Meyer Ginsberg deals with vocational guidance; the Gabinete de Investigações, where Edmur Whitaker deals with the psychology of delinquents; the Centro de Ensino e Seleção de Ferroviários, with Robert Mange and Italo Bologna in charge of psychotechnics; and the Instituto de Pesquisas Juvenis, with a psychoanalyst, Dr. Flávio Dias, and three psychologists, Olympia de Freitas, Dorval Vieira, and Cecilia Maria Janioto.⁴

Sociological and sociopsychological studies are an essential step in the modern political organization of a country, and they have received considerable attention in Brazil. The School of Sociology and Politics of São Paulo was established one year before the foundation of the university, with the practical purpose of training an elite of civil servants. Nelson Werneck Sodré writes:

In the sector of social psychology stand out the names of Oliveira Vianna, with a group of valuable works on the interpretation of the evolution of our people, of Gilberto Freyre, with notable contributions on the influence of plantation work by the slave element on our social development (83), of Alberto Torres, writing on our political formation and our institutions, of Roquette Pinto (199, 200), who threw light on important questions of Brazilian anthropology, and of Arthur Ramos, who has treated the African influence on our development, continuing the studies

⁴ This information was kindly supplied by Professor Noemy da Silveira Rudolfer through the intermediary of Dr. Donald Pierson.

of Nina Rodrigues (191), Manuel Guerino, and many others (207; cf. also 44).

Arthur Ramos is something of a prodigy. Although only 37 years of age, he has done outstanding work in three distinct, though related, fields: psychiatry, cultural anthropology, and social psychology. He received the degree of Doctor in Medicine and Surgery in 1927 from the medical school in Bahía, after a six-year course during which he had specialized in clinical psychiatry and forensic medicine. His dissertation on insanity and crime was approved with high honors. He accepted an assistantship in psychiatry at the São João de Deus Hospital in Bahía and a year later became a candidate for the chair of clinical psychiatry in the Faculty of Medicine, with a paper on deafness in the insane. Then the opportunity was given him to join the Instituto Nina Rodrigues in Bahía, where he remained for the next five years. It was during his association with this institute that he began to turn his attention to problems of cultural anthropology and social psychology.

In 1933 he moved to Rio de Janeiro, where he lectured in extension courses given by the law faculty of the university there, discussing various aspects of the religion and worship of the negroes. A year later his activity was rewarded by an appointment as chief of the Mental Hygiene Service of the Institute of Educational Research of the Federal District. In this capacity he was responsible for the organization of clinics for maladjusted and abnormal children in the public schools of Rio.

In answer to the demand for a scholarly treatment of the problems of Brazilian anthropology and sociology an important publishing house, Civilisação Brasileira, suggested that he organize a series of publications to be known as the *Biblioteca de Devulgação Científica*, making the principal works available in popular editions.

In 1935 the University of Rio invited Dr. Ramos to take the chair of social psychology and also to give instruction in general psychology. The following year, in connection with his teaching of the former subject, he published an *Introduction to social psychology* (186). This book, besides constituting a thorough and up-to-date presentation of the subject as a whole, has several chapters devoted to the interrelation of thought processes in primitives, psychotics, neurotics, children, youths, and normal adults. The fundamental thesis of the author is that Lévy-Brühl's hypothesis

of a special primitive type of thinking is essentially correct, that such primitive thought is closely related to the thinking of children and of certain abnormal individuals, that all of these types of thinking are largely manifestations of Freudian unconscious mechanisms, and that this same primitive-unconscious thinking is present to a greater or lesser degree in normal adults. Dr. Ramos' work in the field of psychiatry also shows stress on psychoanalysis (179, 181-183, 187).

In 1939 his position as an authority on all matters relating to the Negro was recognized further by the invitation of the Minister of Public Instruction to prepare the lists of topics for a proposed Encyclopedia of the Brazilian Negro. He was also urged to deliver a series of lectures on the Negro under the auspices of the cultural division of the municipality of São Paulo. In the course of this work, Dr. Ramos has pointed out time and again that the study of the Brazilian Negro requires a strictly scientific attitude, with no element of fad or fancy involved. He has constantly insisted that the contributions of the Negro to civilization should be treated in the same way as those of the Indian. He has published four books on this subject, including one published in English (184, 185, 188, 189).⁵

Today the trend towards the scientific study of the Negro is strong in Brazil. Dr. Ramos is undoubtedly the most influential worker in this undertaking. Of his work L. L. Bernard writes:

The Brazilian Negro is the most important work on the primitive religious traits of this type which has yet appeared anywhere. It is the result of very careful research and checking of sources. An attempt is made to trace the fetichistic practices, prayers, songs, and dances in the Brazilian negro rituals back to the Gold Coast, Sudanese, and Islamic influences in Africa from which they sprang. There is a good chapter on religious syncretism, and others on fetichistic magic and possession. The author has a strong psychoanalytic bias, chiefly after the manner of Jung, and in the second part of the work, presents a considerable number of standard complexes which he has discovered in the fetichistic practices of the negroes. He also has chapters on phallic symbolization, totemism (Freud), the cult of twins, and Lévy-Brühl's theory of pre-logical thinking as applied to his subject matter (44).

Separate treatment and hospitalization of mental cases in Brazil dates back to the middle of the last century. In 1841 the Emperor Dom Pedro II gave orders to build the Hospicio Pedro

⁵ The preceding data on Arthur Ramos are drawn largely from the introduction, by Richard Pattee, to Ramos' *The Negro in Brazil* (189).

II for the special care of the insane; and in 1842 José da Cruz Robim, professor of legal medicine of the Faculty of Medicine of Rio de Janeiro, was named physician in charge of that institution. In 1852 the Hospicio was officially inaugurated.

It was not until a quarter of a century later, however, that psychiatry was given official recognition as a distinct medical discipline. In 1887 a chair of psychiatry and nervous diseases was established at the Faculty of Rio de Janeiro. Similar chairs were later established in other medical faculties. These chairs were eventually subdivided into chairs of neurology and of psychiatry.

The present incumbents of the chairs of psychiatry at the 10 Faculties of Medicine in Brazil are as follows:

- I. Faculdade Nacional de Medicina de Rio: Henrique Roxo
- II. Faculdade de São Paulo: A. C. Pacheco e Silva
- III. Faculdade de Minas Gerais: Ermelindo López Rodriguez
- IV. Faculdade de Bahía: Mario Leal
- V. Faculdade de Niteroi: Heitor Carrilho
- VI. Faculdade de Recife: Alcides Codeceira
- VII. Faculdade de Para: Porto de Oliveira
- VIII. Faculdade de Paraná: Alo Guimeraes
- IX. Faculdade de Porto Alegre: Luis Guedes
- X. Faculdade de Medicina y Cirurgia de Rio de Janeiro: Plinio Olinto

One of the psychiatrists in Brazil who has contributed most to psychology is A. Austregesilo (1876-). He is a well-known intellectual figure not only in South America but also in Europe, particularly in France and Spain. Among his very numerous publications are many that deal with the psychoneuroses and general problems of adjustment (10-20). Henrique de Brito Belford Roxo (1877-), professor in the psychiatric clinic of the Faculty of Medicine at Rio and author of a well-known *Manual de psychiatria* (first edition, 1921; third edition, 1938), has also published a number of articles on psychological topics (201-204).

The Brazilian literature on psychiatry is to be found principally in journals. The oldest and probably the most important periodical for psychiatry in Brazil is the *Archivos Brasileiros de Neuríatria e Psichiatria*, the official organ of the Sociedade Brasileira de Neurologia, Psichiatria e Medicina Legal of Rio. Other periodicals in this field are: *Neurobiologia*, Recife; *Revista de Neurologia e Psichiatria*, São Paulo; *Annaes da Assistencia a Psicópatas* and *Annaes da Colonia de Psicópatas Gustavo Riedel* of the Federal District; *Arquivos da Assistencia General a Psicópatas do*

Estado de São Paulo and *Memorias do Hospicio de Juquery*, São Paulo; *Archivos do Manicomio Judiciario do Rio de Janeiro*; *Boletim da Liga Brasileira da Higiene Mental* and *Boletim de Higiene Mental*, Recife; *Archivos de Assistencia Hospitalar de Minas Gerais* and *Boletim da Liga de Higiene Mental*, São Paulo.⁶

As in many other Latin-American countries, criminal anthropology is highly developed in Brazil. In the review quoted above, L. L. Bernard (44) characterizes the *Arquivos de Medicina Legal e Identificação* of Rio as one of the two best periodical publications on identification in existence. (The other is the *Revista de Identificación y Ciencias Penales* of La Plata, Argentina.) It is in regard to psychological problems related to criminology that Brazilian psychology has made some of its most distinctive contributions. Thus, Dr. W. Berardinelli of the Faculty of Clinical Medicine of Rio has written a general treatise on individual differences (42) and a work on criminal biotypes (43), in which he seeks to add new correlations of personality and crime to those already ascertained.

In the field of educational psychology the outstanding name in Brazil is that of Manoel Bergström Lourenço Filho. From 1935 to 1938 he was professor of educational psychology at the School of Education, which forms part of the University of Brazil. In 1938 he became the first director of the new Institute of Pedagogical Studies, where he is carrying on investigations in the field of psychology applied to education (103, 208). Among the other teachers and research workers in this field are the following: Hélène Antipoff, of the Escola de Aperfeiçoamento at Belo Horizonte; Isaías Alves, at Salvador, Bahía; Noemy da Silveira Rudolfer, chief of the laboratory of psychology of the School of Philosophy, Sciences, and Letters of the University of São Paulo; and Olga Strehlneek, assistant in educational psychology at the same university.

Among physiologists contributing to psychology in Brazil we must mention Nelson Chaves, a neurologist and teacher of clinical therapy at the Faculty of Medicine of Recife. In a recent article on emotion (59; cf. also 60), Chaves deals at length with two related aspects of emotion often neglected by North American psychologists: the emotional activity of endocrine glands other than the adrenals, and the development of pathological syndromes in connection with emotions. The hypophysis (pituitary gland) is known to exert a widespread influence on physiological functions.

⁶ The preceding data on psychiatry in Brazil are drawn largely from an article on psychiatry in South America by H. Delgado and J. O. Treilles (74).

Bernardo Houssay, the noted Argentine physiologist, has, for instance, shown that it plays a considerable role in diabetic phenomena. Indeed, the pituitary appears to act to some extent as a pacemaker for other endocrine glands. Chaves has concerned himself with the role of the hypophysis in emotion. "Among the glands of internal secretion which intervene in the physiology of the emotions there is in the first line the hypothalamic-hypophysial (pituitary) apparatus integrated through the vegetative hypothalamic nuclei and the hypophysis proper" (59). Following Argentina's Marañón, Chaves points out that pituitary hormones are perhaps responsible for certain emotionally determined premature births and for certain emotional effects of menstruation. He also believes that certain emotional changes in pigmentation are mediated by pituitary hormones, and, further, that hyperpituitary and hypopituitary activities are related to definite temperamental syndromes.

Another gland whose role in emotion is stressed by Chaves is the thyroid. He cites Marañón's observations of emotional hyperthyroidism in the Asturian revolution of 1935 and the Spanish revolution of 1936 and 1937. He then goes on to cite a clinical case of his own where a Basedowian syndrome developed in connection with fear caused by firing in a revolution at Recife. Emotional hyperthyroidism, he believes, may be mediated by secretion of the adrenals.

The importance of the French influence on Brazilian psychology, stressed at the beginning of this section, can now be demonstrated more clearly. The *Revista de Neurologia e Psichiatria de São Paulo*, devoted about equally to clinical neurology and juridical psychology, includes a section of reviews of books and periodicals and also a list of publications received. The table below gives by language groups the number of items in these two classes for Volume 4, 1938, Nos. 2, 3, and 4, and for the four numbers of Volume 5, 1939. (Each issue of a periodical counts as a separate item.)

	Books and Articles Reviewed	Books, Journals, and Reprints Received
Brazilian	10	200
Other Latin-American		
countries	11	55
French (Belgian, Swiss)	22	50
United States	15	24
Italian	1	30
German (Austrian, Swiss)	1	4

It should be noted that in both columns, if we except the Latin-American items, French language publications predominate, whereas Italy sends many items but figures little in reviews. The United States sends somewhat fewer items, but is next to France in the number of items reviewed, not excluding Latin-American items. Germany foots the list in both cases. Incidentally, the reviews of United States publications represent a positive effort, not merely a reviewing of items received. The United States periodicals received are the *Journal of Nervous and Mental Diseases*, the *Transactions of the College of Physicians of Philadelphia*, the *American Journal of Sociology*, the *Physician's Bulletin*, Indiana, and the *Medical Times*, Brooklyn, New York. The United States periodicals reviewed are the *Archives of Neurology and Psychiatry* and the *Bulletin of the Neurological Institute of New York*.

CHILE

In the case of Chile, again, we find experimental psychology notably decentralized; and, again, French influence can reasonably be invoked as an explanation.

The University of Chile was founded largely on the model of the University of Paris. This was not extraordinary; in fact, it merely demonstrates the scope of French influence on education and culture in Latin America in the last half of the nineteenth century. It was a widespread phenomenon. All South American peoples, after years of struggle against Spain for their independence, felt that it was their duty to rebel against all that was Spanish, because everything pertaining to that nation reminded them of the colonial yoke. We have already seen that French theories of political freedom and independence were those most cherished by the patriots, and naturally people of that generation looked toward France, the most advanced Latin country, as their teacher and model (89; cf. also 85).

The best-known contributor to psychology in Chile is probably Enrique Molina Garmendia (1871-), rector of the University of Concepción and editor of *Atenea*, a publication similar to the North American *Atlantic Monthly*. Technically, Molina should be classed as a philosopher. He is especially interested, however, in social, educational, and psychological problems.

One of the earliest of Molina's books, *De California a Harvard (From California to Harvard)* (128), the outcome of a trip to the major universities of the United States, is very characteristic of the author. It is the book of a philosopher interested in education, but also of a man who wants first-hand facts about human beings and is willing to travel far afield and to meet many people in order to

get them. Just recently Molina has written another informative and very human account of a later visit to the United States (132). The more technical works of Molina concern themselves primarily with ethical and social-ethical problems. In *Filosofía Americana; Ensayos (Essays of American philosophy)* (127), one of the principal problems is the reconciliation of freedom with determinism. His recent book, *De lo espiritual en la vida humana (Spiritual values in human life)* (131), is an attempt to define progress in such a way as to include harmoniously both material and moral values. This emphasis on ethics is even apparent in his more historical works (129, 130).

Chilean psychiatry may be said to have started in 1891, with the nomination of Professor Augusto Orrego Luco to a chair of nervous and mental diseases in the Medical School of Santiago. Orrego pushed both the study of psychiatry and the study of neurology (105-108). Professor Joaquín Luco, disciple of Orrego, succeeded his master in 1906 and remained titular professor of psychiatry and neurology until 1925. At that date the two subjects were divorced. Professor Oscar Fontecilla was nominated to the chair of psychiatry. After his death, around 1937, Dr. Arturo Vivado O. succeeded to the chair of psychiatry. In 1935, Professor Fontecilla founded the only review of neuropsychiatry in Chile, the *Revista de Psiquiatría y Disciplinas Conexas*. His publications have dealt with mental automatisms and a variety of other psychiatric problems.

Except for the work of Allende Navarro, a disciple of von Monakow, contemporary research on psychiatry is published in the *Revista de Psiquiatría y Disciplinas Conexas* and presented at the meetings of the Chilean Society of Neurology, Psychiatry, and Legal Medicine which take place fortnightly for nine months of the year (74).

Dissemination of knowledge on mental hygiene has been attempted by Dr. Muñoz, of the University of Chile, in "popularized" courses. Dr. Baldomero Arce Molina published in 1937 a book entitled *Higiene mental* (9). Drs. Guillermo Agüero, Luis Cubillos, and Alberto Gallinato deal with mental hygiene at the Behavior Clinic related to the Experimental School of Development for the education of abnormal children, which is under the Ministry of Education (cf. 74).

PERU

Peru is, to a considerable degree, the birthplace of culture in Latin America. The University of San Marcos, in Lima, is the

oldest university in the New World. It was founded by a decree of the Emperor Charles V, dispatched from Valladolid May 12, 1551 (although the decree did not reach Lima for two years, and, due to lack of funds, the university did not operate effectively until around 1571) (205). There is another large university at Lima, the Universidad Católica, and two others in other parts of Peru: the Universidad Menor del Cuzco, at Cuzco, and the Universidad Nacional del Gran Padre San Agustín, at Arequipa.

General experimental psychology is little developed in Peru, presumably because of the pressure of practical problems. Nevertheless, the University of San Marcos has on its faculty a man who in the past has contributed noticeably to general experimental psychology, Dr. Walter Blumenfeld. Dr. Blumenfeld, originally professor at Dresden, Germany, now teaches experimental psychology at Lima and is director of the Institute of Psychology and Psychotechnics at the University of San Marcos. His work in Germany centered on the experimental psychology of judgment and on the problems of perception (45-50, 55). Of late, however, he has been more concerned with psychotechnics (51, 53). He has also written articles on other fields of general psychology (52, 54).

Abnormal and dynamic psychology—as distinct from psychiatry—are well represented in Peru in the person of Honorio Delgado (1892-). In outlook and interests Delgado is on the order of Ribot and Georges Dumas: a "medical psychologist" but much interested in academic psychology. He differs from these men, however, in his emphasis on the phenomenological procedures of Husserl and Scheler, and especially on the analytic approach of Freud. Delgado knew Freud personally, admired him, and considered his dynamic and genetic approach to be one of the utmost significance to psychology. He received the doctorate in medicine from the University of San Marcos in 1919 and the doctorate in natural sciences in 1923.

Honorio Delgado has been physician of the Victor Larco Herrera Hospital since 1920. He was professor of general pathology in the Faculty of Lima from 1922 to 1925 and of general biology in the Faculty of Sciences of Lima, 1924-1925; consulting psychiatrist of the Ministry of Justice, 1926-1933; professor of psychology in the Faculty of Philosophy of Lima, 1928-1931. Since 1930 he has been professor of psychiatry and neuropathology in the Faculty of Medicine at Lima. He is a member of the Academia Nacional de Medicina of Lima and of the Academia Nacional de Medicina of Madrid (académico de honor, 1934) (110).

Delgado has published a number of works on Freud and psychoanalysis (61-63, 68, 76), several articles on psychiatric problems, and a series of general discussions of mental functions from the point of view of both normal and abnormal psychology (66, 67, 69-73). In 1933 he published a general textbook of psychology with Mariano Ibérico (65) and a monograph on the mental development of the individual (64). Recently he has contributed an article on the history of psychiatry in South America (with J. O. Trelles) and one on psychology during the last hundred years (74, 75). From 1918 to 1924 Delgado was co-editor of the *Revista de Psiquiatría y Disciplinas Conexas* of Lima. He is at present director of the *Revista de Neuro-psiquiatría* of Lima.

The editor of the *Revista de Neuro-psiquiatría*, C. Gutierrez Noriega, is a neurologist whose field of research lies close to psychology. He has published recently an experimental research on the effect of cerebral ablation on epileptic seizures produced by cardiozol in dogs (87), an article on the theory of convulsive therapy (88), and an interpretative study of magic thought manifested in pictures of ancient Peru (86).

OTHER SOUTH AMERICAN COUNTRIES

In Ecuador, the outstanding figure with respect to psychology is Dr. Julio Endara (1899-), titular professor of psychiatry and neurology and of educational psychology at the Central University of Ecuador at Quito. Endara's field of activity has been broad. He has published contributions on the history of philosophy, on psychiatry, and on problems of personality, temperament, and constitution. (77-80; for his bibliography to 1932, cf. the *Psychological register*, Volume 3, 147.) He is director of the *Archivos de Criminología, Neuropsiquiatría, y Disciplinas Conexas* of Quito.

Endara, in listing psychologists in Ecuador for the third volume of Murchison's *Psychological register*, mentions Manuel Utreras Gomez (1901-) and Jorge Escudero. Utreras Gomez occupied the chair of psychology in the two normal schools of Quito from 1929 to 1931 and since then has been Assistant Secretary of Public Education. Escudero was professor at the Central University of Ecuador from 1929 to 1931. (For their bibliographies to 1932, cf. the *Psychological register*, Volume 3, 147.)

In Paraguay an important figure is Manuel Riquelme, who teaches psychology and philosophy of education at the Escuela Normal de Profesores, logic and pedagogy at the Colegio Nacional de Asunción, and gives a course of psychological lectures at the

Escuela Superior del Estado Major del Ejercito (War College). He is the author of a textbook of psychology (190).

According to Riquelme, psychology in Paraguay was strongly influenced in a positivistic direction by the teachings of Eusebio Ayala (President of the Republic from 1932 to 1936) and of Cecilio Baez, and this influence continues to manifest itself today. At present psychology is taught at the Escuela Normal de Pilar by Serviliano Peralta, at the Escuela Normal de Encarnación by Saturnino Rojas, at the Escuela Normal de Villarica by Elias Balliosan, at the Colegio Nacional de Asunción by Guillermo Enciso Velloso, at the Colegio Internacional by Maria Adela Garcete, and at the Colegio Aleman by Juan Vicente Ramirez. Riquelme also mentions the following names in connection with psychology in Paraguay: Ramon I. Cardozo, Gaspar N. Cabrera, Wilfreda Carisimo de Avalos, Esperanza Abram, and Herminia de Brix (cf. 82).

With respect to Bolivia, Colombia, Uruguay, and Venezuela, information available at present is too scanty to warrant more than the mention of names in the Partial List of South American Psychologists appended to this article.

CONCLUSION

We have found in the course of this survey that a great deal of psychological work is in progress in South America. The psychological tradition in the southern part of our hemisphere is, however, quite different from our own, for it stems largely from France. In scarcely any of the countries considered did we find evidence of independent, isolated psychological research. Instead, we encountered always a close alliance with other disciplines—with medicine, with pedagogy, with social science, with philosophy. Furthermore, there is in South American psychology a strong emphasis upon utility. Psychological research is undertaken there with an eye to solving pressing human problems rather than for the mere extension of scientific knowledge.

The South American tradition in psychology lends itself especially to the creation of institutes where many sciences are combined in the treatment of some particular problem. This convention is well illustrated by the laboratories for aviation medicine at Buenos Aires and Rio de Janeiro. There we find psychology fused harmoniously with other disciplines, not simply added to them. The South American tradition also lends itself to the ready com-

bination of psychology with sociology and ethnology. Good examples of this fusion are the work of Palacios in the Argentine and that of Ramos in Brazil.

The existence of so much psychological research in South America immediately raises two practical problems: How are we in North America to profit by it; and, conversely, how are South Americans to profit from our research?

It is usual, in considering such a problem, to stress the "language difficulty." To have North American psychologists know Spanish and Portuguese would undoubtedly be helpful, as would be a greater knowledge of English on the part of the South Americans. We do not think, however, that language presents the chief difficulty. How many North American psychologists conversant with Gestalt psychology can really read German?⁷ And how many North Americans familiar with Spanish or Portuguese know anything about South American psychology?

The spread of specialized knowledge from one nation to another occurs, it seems to us, through the work of a few 'emissaries' who have not only the linguistic ability to receive and transmit the knowledge, but also the motivation and facilities necessary to perform their function. What is needed, above all, is emissaries.

As far as linguistic ability is concerned, our impression is that opportunities to acquire English are adequate in South American institutions and that opportunities for North Americans to master Spanish or Portuguese would be rendered adequate by allowing one of these two languages to replace French or German in the requirements for the doctor's degree. With respect to motivation, it seems quite adequately supplied by the friendly relations between American countries and their relative isolation from countries on other continents.

There remains the problem of facilities. Here it seems that the cardinal problem is that of library accommodations. Let us assume that a North American social psychologist knows Portuguese and that he has learned that Arthur Ramos is making definite contributions to his field in Brazil. Let us suppose, further, that he would like to read the works of Ramos and spread his knowledge of them among his colleagues. What does the library of his university offer? Probably the English translation of one of the books of Ramos and nothing else. Of course, he can get the other books

⁷ Cf. Boring, E. G. Do American psychologists read European psychology? *Amer. J. Psychol.*, 1928, 40, 674-675.

from the Pan-American Union or the Library of Congress, but only with delay—one book at a time—and only when no other psychologist in the United States is already using the book. With all these barriers, his motivation must be strong if it is not to be lost. If we are to know South American psychology and if the South Americans are to know ours, then the task of the emissaries must be made easier through an improvement of library facilities in both hemispheres.

South Americans seem far better off in this respect than are we. The reading lists of psychology courses in the University of São Paulo include a large proportion of North American books, and we may therefore take it for granted that these books are available there. It is here in North America that the need seems to be the greater. If North Americans are not to remain crassly ignorant of this considerable psychological productivity in the southern half of their hemisphere, their libraries must procure South American journals dealing with psychology and the works of the outstanding South American psychologists. We hope that the bibliography of this article will make this task easier for librarians as far as books are concerned. To facilitate selection of journals we have also appended a selected and annotated list of the South American periodicals that deal with psychological topics.

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SELECTED LIST OF SOUTH AMERICAN PERIODICALS
DEALING WITH PSYCHOLOGICAL TOPICS⁹

Argentina

Anales del Instituto de Psicología de la Facultad de Filosofía y Letras de la Universidad de Buenos Aires.

Edited by Enrique Mouchet, of the Instituto de Psicología. Available at the Columbus Memorial Library of the Pan-American Union. Issued at irregular intervals. Volume 2, 1938, contains 21 articles distributed as follows: psychiatry and abnormal psychology, 9; theoretical psychology and history of psychology, 6; experimental and physiological psychology, 6. Contributions are not only from the Argentine, but also from other Latin-American countries. Covered in *Psychological Abstracts*.

Archivos Argentinos de Neurología, Belgrano 2563, Buenos Aires.

Edited by Manuel Balado. The general secretary is R. Carillo. Published monthly (the most recent issues inspected were those of May and June, 1940). Available at the Library of the Pan-American Sanitary Bureau, Washington, D. C.

This is the official organ of the Chair of Neuro-Surgery and of the Society of Neurology and Psychiatry of Buenos Aires. It covers neurology from the experimental, clinical, and anatomical points of view. Its collaborators include the well-known physiologist, Bernardo Houssay.

Boletín del Centro Naval, Buenos Aires.

Available (Volumes 20-45) at the Columbus Memorial Library of the Pan-American Union.

Boletín del Instituto Psiquiátrico de la Facultad de Ciencias Médicas de Rosario, Suipacho 667, Rosario.

A quarterly publication. The director is Lanfranco Ciampi. Publishes works of the Laboratory of Experimental Psychology of the Instituto Psiquiátrico. Covered in *Psychological Abstracts*.

Humanidades, Facultad de Humanidades y Ciencias de la Educación, Universidad de la Plata.

Its director is Alfredo Calcagno; its editor, Juan José Arévalo. A literary journal, which occasionally publishes articles on psychology. Available at the Library of Congress. Covered in *Psychological Abstracts*.

Index Revista Ibero-Americana de Análisis Bibliográficos de Neurología y Psiquiatría, Maipú 827, Buenos Aires.

The managing editor is S. Chichilniski. Available at the Boston Medical Library. It is the nearest Latin-American equivalent to our *Psychological Abstracts*. Its field, however, is predominantly psychiatric and

⁹ Parentheses indicate that a periodical has definitely ceased publication or has changed its name.

neurological. Issues consist of one substantial review of some particular topic, often a translation of a United States article; of half-page to full-page reviews of books or important articles; and of mere citations, by name, title, and locus of publication. Covered in *Psychological Abstracts*.

(*Neurônio, Archivos Latino-Americanos de Neurología, Psiquiatría, Medicina Legal, y Ciencias Afines.*)

Ceased publication in 1940.

Prensa Médica Argentina, Junin 845, Buenos Aires.

A weekly publication, available at the Library of the Pan-American Sanitary Bureau, Washington, D. C.

(*Psiquiatría y Criminología.*)

See *Revista de Psiquiatría y Criminología*, below. Covered in *Psychological Abstracts*.

Revista Argentina de Neurología, Psiquiatría y Medicina Legal, Buenos Aires.

Available at the Library of the Surgeon General's Office.

Revista del Centro de Estudiantes de Ciencias Económicas.

Publishes some of the monographs by students of the Laboratory of Psychology attached to the Chair of Labor Legislation occupied by Alfredo L. Palacios.

(*Revista de Criminología, Psiquiatría y Medicina Legal.*)

See *Revista de Psiquiatría y Criminología*, below. Available at the Library of the Harvard Law School.

(*Revista de Filosofía.*)

Publication suspended around 1929. Available at the Library of Congress.

Revista de Identificación y Ciencias Penales, Universidad Nacional de La Plata.

The editor is Luis Reyna Almandos. Available at the Library of Congress.

Revista Médica Latino-Americana, Córdoba 2088-2092, Buenos Aires.

The directors are R. A. Bullrich, A. Raimondi, J. A. Dominguez. A monthly publication (the most recent issues inspected were those of October, 1938, to September, 1939). Available at the Library of the Pan-American Sanitary Bureau, Washington, D. C.

This periodical publishes occasionally original articles of psychological interest. J. V. d'Oliveira Esteves, who has made extensive psychometric

tests of pilots, has published on this subject in this periodical. Each issue has an extensive section giving the principal contents of current Latin-American scientific periodicals, including psychiatric periodicals. This section is an excellent source for psychological and quasipsychological material.

Revista Neurológica de Buenos Aires, Libertad 960, Buenos Aires.

The editor is V. Dimitri; the general secretary, R. Morea; the editing secretary, J. Aranovich; the Editorial Committee, Felipe Cia, Jorge Bullo, Alfredo Menzani, Braulio Moyano, Roque Orlando, E. A. Pedace, J. P. Krafer, M. Victoria, T. B. di Matteo. Available at the Library of the Pan-American Sanitary Bureau, Washington, D. C. Volume 5 was published in 1940.

An announcement states that this periodical will publish neurological and psychiatric work of anatomical, clinical, or experimental character. The contents indicate a stress on clinical and experimental neurology. Mira has published in this periodical.

Revista de Psiquiatría y Criminología, Juncal 2286, Buenos Aires.

The editor of this bimonthly publication is Osvaldo Loudet. Volume 4, 1939, is the most recent one inspected. Available at the Library of the Pan-American Sanitary Bureau, Washington, D. C.

It is the continuation (1937) of *Psiquiatría y Criminología*, in turn a continuation (1936) of the *Revista de Criminología, Psiquiatría y Medicina Legal*, apparently under the editorship of Loudet. The latter periodical was the continuation (1913) of the *Archivos de Criminología*, founded around 1902 by José Ingenieros, an outstanding figure in criminology and placed in charge of the Institute of Criminology of Buenos Aires at its foundation, around 1907. The *Revista de Psiquiatría y Criminología* is the organ of the Sociedad Argentina de Criminología and of the Sociedad de Psiquiatría y Medicina Legal de la Plata. Of the 17 original articles in the 1939 volume, 9 are on psychiatry and 8 on criminology. The periodical also reports the proceedings of the societies it represents and of related congresses. There are reviews of books and periodicals. The contributors include Austregesilo (Rio), Delgado (Lima), Loudet, and Sal y Rosas. Covered in the *Psychological Abstracts*.

Revista Sudamericana de Psicología y Pedagogía, Edificio Central de Correos, Buenos Aires.

The editors, as of October, 1940, are Emilio Mira and Béla Székely.

La Semana Médica, Córdoba 2240, Buenos Aires.

A weekly, edited by Tiburcio Padilla. Available at the Library of the Pan-American Sanitary Bureau, Washington, D. C.

This periodical claims to be the medical publication with the largest circulation in the Argentine. It includes occasional articles on psychiatry. It is an excellent medium for keeping up with events of interest in the medical world of Argentina.

Brazil

Archivos Brasileiros de Higiene Mental, Rio de Janeiro.

The director is Ernani Lópes. The Library of the Pan-American Sanitary Bureau has *Archivos Brasileiros de Higiene Mental*, which may be the same publication.

According to Americo Foradori, this is an important place of publication for psychological works of Brazil (82).

(*Archivos Brasileiros de Medicina*, Rio de Janeiro.)

Ceased publication in 1935, according to the Pan-American Sanitary Bureau. Available at the Library of the Surgeon General's Office. Covered in *Psychological Abstracts*.

Archivos Brasileiros de Neuriatria e Psiquiatria, Caixa Postal 1258, Rio de Janeiro.

The founders are Juliano Moseira, A. Austregesilo, Henrique Roxo, Ulysses Viana, W. Almeida; the director, A. Botelho. A bimonthly publication, it was still being issued in 1939. Available at the Library of the Pan-American Sanitary Bureau, Washington, D. C. Psychiatry is its chief interest. Covered in *Psychological Abstracts*.

Arquivos de Servicio de Assistencia a Psicópathas do Estado de São Paulo.

Still being issued in 1940. Available at the Library of the Pan-American Sanitary Bureau, Washington, D. C.

Arquivos de Medicina Legal e Identificação, Imprensa Nacional, Rio de Janeiro.

The editors are Leônido Ribeiro and Miguel Sales. It is reputed to be one of the two best periodicals in existence on identification. Covered in *Psychological Abstracts*.

Neurobiologia, Caixa Postal 651, Recife, Pernambuco.

The director is Ulysses Pernambucano. A quarterly publication; the most recent issue inspected is No. 2, Volume 3, 1940. Available at the Library of the Pan-American Sanitary Bureau, Washington, D. C.

It is the official organ of the Society of Psychiatry, Neurology, and Mental Hygiene of the Northeast of Brazil.

Revista de Neurologia e Psichiatria de São Paulo, Caixa Postal 1758, São Paulo.

The editor is J. F. Alvim. Jose Gomes is also connected with the management. The Council of Directors includes A. Austregesilo and Henrique Roxo. A quarterly. The last issues inspected are those of November-December, 1940. Available at the Library of the Pan-American Sanitary Bureau, Washington, D. C.

This review refers to itself as "the specialized review with the largest circulation in Brazil." Subscriptions for the U.S.A. are four U.S. dollars

a year. The review publishes original articles on neurology and psychiatry in a wide sense (including, for instance, a discussion of psychoanalytic anthropology) and reports of meetings of various psychiatric societies of Brazil. Covered in *Psychological Abstracts*.

Chile

Revista de Psiquiatría.

Revista de Psiquiatría y Disciplinas Conexas, Casilla 6507, Santiago de Chile.

Edited for the University of Chile by A. Vivado O., Victor Arroyo A., and Manuel Feo Beca. Available at the Library of the Pan-American Sanitary Bureau, Washington, D. C.

Original articles fall about evenly in the fields of neurology and psychiatry, both clinical and experimental. There is a limited section of reviews of books and periodicals. This review specifically invites exchanges. Covered in *Psychological Abstracts*.

Atenea, Revista Mensual de Ciencias, Letras y Artes, Concepción.

The editorial board consists of Enrique Molina and Felix Armando Nuñez. A monthly, published since 1924. Available at the Library of the Pan-American Sanitary Bureau, Washington, D. C.

This is not a psychological periodical, but rather a periodical somewhat like the *Atlantic Monthly*. Some of its articles, however, are highly technical. General articles on psychology might be acceptable to it. The editor, Enrique Molina, is dean of the University of Concepción and the author of books relating to psychology.

Colombia

Revista Javeriana, Apartado 445, Bogotá.

The directors are R. Restrepo, S. J., dean of the Xaverian University, Bogotá, and F. J. Gonzales, S. J. The last issue inspected is that of February, 1941. Available at the Columbus Memorial Library of the Pan-American Union.

This is not a psychological publication, but a review on the order of the *Atlantic Monthly*. Occasionally it publishes quite technical scientific articles.

Ecuador

Archivos de Criminología, Neuropsiquiatría y Disciplinas Conexas, Venezuela 31, Quito.

The director of this quarterly publication is Julio Endara. The last issues inspected are those of Volume 3, 1939. Available at the Library of the Pan-American Sanitary Bureau, Washington, D. C.

This is the organ of the Institute of Criminology. The original articles in the volumes for 1938 and 1939 cover clinical psychiatry and criminology about evenly. The director, Julio Endara, has published at length on the application of the Rorschach test to problems of delinquency. There is a good section of bibliography. Covered in *Psychological Abstracts*.

*Peru**Actualidades Médicas Peruanas.**Revista de Filosofía y Derecho*, San Andrés 174, Cuzco.*Revista de Neuro-Psiquiatría*, Casilla 1589, Lima.

The directors are H. Delgado and J. O. Trelles; the editor-in-chief, C. Gutierrez-Noriega; the editorial secretaries, P. Anglas-Quentana, L. A. Guerra, Leon Mejia, F. Sal y Rosas, and J. Voto Bernales C. A regular quarterly publication since 1938. Available at the Library of the Pan-American Sanitary Bureau, Washington, D. C.

Delgado is both a psychologist and a psychiatrist (he has published a textbook of psychology). Nos. 1-3 of Volume 3, 1940, present 6 articles on clinical neurology, 2 on experimental neurology, and 2 on abnormal psychology. Each issue contains a considerable number of reviews of books and periodicals, and also miscellaneous notices. Covered in *Psychological Abstracts*.

*Uruguay**Boletín del Instituto Inter-American de Protección de la Infancia*, Montevideo.

Available at the Library of the Pan-American Sanitary Bureau, Washington, D. C. Covered in *Psychological Abstracts*.

Revista de Psiquiatría del Uruguay, Millán 2512, Montevideo.

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PARTIAL LIST OF SOUTH AMERICAN PSYCHOLOGISTS¹⁰*Argentina**Buenos Aires**Universidad Nacional de Buenos Aires* (founded, 1821):

Coriolano Alberini (introduction to philosophy and psychology)
Alfredo L. Palacios (labor legislation, including experimental research on labor)

¹⁰ This list is based principally upon the following sources: *Minerva, Jahrbuch der gelehrt Welt*, Volume 2, *Die aussereuropäischen Hochschulen*, Berlin, 1938; articles by Americo Foradori on psychology in Argentina (81) and in Latin America (82); Murchison's *Psychological register*, Volume 3 (147); a memorandum, *The teaching of psychology in the other American republics*, supplied by Mr. Charles

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 Enrique Mouchet (experimental and physiological psychology)
 José L. Alberti (chief, laboratory of experimental psychology)
 Leon Jachevsky (in charge of practical work, laboratory of experimental psychology)
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 Juan Ramón Beltrán (experimental and physiological psychology, director of the Cabinet of Psychophysiology of the Colegio Militar)
 Osvaldo Loudet (psychiatry, experimental psychology)
 Emilio Mira (psychiatry, experimental psychology)

Laboratory of the Navy for Aptitude Examinations:

Julio d'Oliveira Esteves (psychotechnics)

Cabinet of Psychophysiology of the Colegio Militar:

Adolfo M. Sierra (permanent investigator)

Instituto Nacional del Profesorado Secundario:

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 F. W. Torres (sociology)
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 C. Jacob (biology and nervous system)
 Alberto Palcos
 F. L. Soles (physiological psychology)
 Alfredo L. Calcagno (director, laboratory of experimental psychology, annexed to chair of psychopedagogy)

Thomson, chief of the Division of Cultural Relations of the U. S. Department of State; personal communications from Professor Noemy da Silveira Rudolfer and Dr. Donald Pierson, of São Paulo; Dr. Henriquez-Ureña, of Buenos Aires; Dr. Wolfgang Köhler, of Swarthmore College; Dr. C. A. Pacheco e Silva, of São Paulo; Dean Esther Allen Gaw, of Ohio State University; Mrs. Wilhelmina R. Wallin, of Bolivia; Dr. Nelson Chaves, of Recife-Pernambuco; and catalogues of South American universities.

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 Antonio Foz (psychiatry, adult)
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*Villarica**Escuela Normal:*

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*Peru**Arequipa**Universidad Nacional del Gran Padre San Agustin:*

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CHILDHOOD MEMORIES: A REVIEW OF THE LITERATURE

BY GEORGE J. DUDYCHA AND MARTHA M. DUDYCHA

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Because psychoanalysts have stressed the point that much of the maladjustment among adults is due to infantile sexual experiences which have been repressed, and because their therapy is to reveal these early experiences to the patient and to readjust him to them, many people have associated the study of early memories solely with psychoanalytic doctrine. As we shall see presently, psychologists were interested in childhood memories long before psychoanalytic theory was well developed. Although we may agree with the psychoanalyst that the repressed experiences of infancy which are recalled with exceeding difficulty are significant for therapy, we must grant that other early experiences which are consciously recalled again and again in later years may be just as potent in determining behavior. A single example will make this clear. A two-year-old child has a very unpleasant experience with a pugnacious rooster. Although this child is in no wise injured, he recalls this highly affective experience many times in later life. And, even as a mature person, he has a horror of roosters and refuses to eat any type of fowl. This experience certainly was not repressed; and only the most credulous person would accept it as a sexual experience. Yet it is significant for an understanding of that person's adult behavior.

That the conscious recall of early childhood experiences is of value for genetic psychology was recognized by Titchener (35), who, as early as 1900, wrote a brief note in the *American Journal of Psychology* in which he called the attention of psychologists to G. Stanley Hall's (16) "Note on early memories," published the year before. Titchener's enthusiasm for Hall's approach is indicated in his statement: "It [Hall's approach] is also of great importance from the genetic standpoint, and should receive careful criticism and consideration from workers in the genetic field" (35, p. 435). Several years later Hollingworth (25) commented favorably on Colegrove's (6) study of "Individual memories," published the same year as Hall's report. In other quarters, and

particularly more recently, marked skepticism of this method has been sounded. This has been due largely to the fact that many of the students of early memories accepted the reports of untrained introspectionists without making any effort to check them or to cross-examine the respondents. Brooks (4), for example, rejects such studies as that made by Gordon (12), and others, for two reasons: first, because most early memories, in his estimation, are nothing but verbal stereotypes; and second, because many of the supposed memories may be memories of being told of early experiences.

The authors sympathize with both of these points of view. The careful examination of memories of early childhood does throw some light on the attitudes and experiences of older children and adults—it is a valid genetic approach. On the other hand, we agree that the indiscriminate acceptance of memorial reports indicates a lack of scientific and discriminating insight. Because of these convictions, the authors are presenting this summary and critical analysis of the reports on childhood memories which have been published in the last 47 years. Extensive citations to psychoanalytic literature will not be made in the present article because the authors are not here concerned with the *repressed* infantile experiences, but rather with those which have been recalled. Some space will be devoted to a discussion of psychoanalysis, however, because a number of the studies of childhood memories were undertaken with a view to supporting or contesting psychoanalytic theory.

Obviously, all of the studies reviewed here are not similar in aim, method of approach, and results obtained. Hence, we shall try to point out their similarities and differences, their adequacies and inadequacies, as they are related to the following problems.

METHODS USED IN GATHERING DATA

The Questionnaire Method. The first approach to the problem of childhood memories was made with the questionnaire. Miles (31), in 1893, published results obtained with a questionnaire the purpose of which was to get at the inner life of an individual. Among other questions, one dealt with early memories, namely: "What is the earliest thing you are sure you can remember? How old were you?" Two years later Victor and Catherine Henri published the first questionnaire devoted solely to early memories. Their questionnaire was published in five psychological journals,

three French and two American—the *Psychological Review* (20) and the *American Journal of Psychology* (21). The questionnaire, consisting of 11 questions, was designed to discover other pertinent facts, such as vividness of visual and auditory imagery, age and usual occupation of respondent, the significance of the memory to the person reporting, etc., as well as the nature of the experience remembered. Results of their investigation were published in France (22) in 1896. This report was later translated and published in the *Popular Science Monthly* (23) in 1898. Close on the heels of the Henris' American report came Colegrove's (6) article, which was published in the *American Journal of Psychology* in 1899. This article was also embodied, as Chapter 6, in his book, *Memory: an inductive study* (7), published the following year. Colegrove's questionnaire consisted of 14 questions, most of which dealt with early experiences. He also raised questions concerning memories for specific things, such as earliest book read and book remembered best; early memories of father, mother, etc.; and pleasant and unpleasant memories.

Direct-Question Method. The above-mentioned studies are obviously subject to all of the inadequacies of the questionnaire method and particularly to the difficulty of securing returns which are always small when questionnaires are mailed, or published as the Henris' was. To obviate this difficulty, several investigators resorted to a direct-question method—that is, they merely asked a group of assembled people to state their earliest memories and facts pertinent thereto. Among these are Potwin (34), Henderson (18), Dudycha and Dudycha (10), and Benoschofsky (2).

Brief Questionnaires Presented to Assembled Groups. More recently there has been a tendency to combine the first two methods mentioned above—that is, to secure reports of early experiences from groups of assembled people and to aid them in making a systematic report by giving them a brief questionnaire. This method practically assured the investigator of at least one early memory, and other pertinent data, from each member of the group questioned. Several of the studies in this group provided mimeographed sheets, with the questions at the top and space for the remembered experience at the bottom, so that each memory could be reported on a separate sheet. This method not only facilitated the subsequent handling and classification of the memories, but also assured more complete data for each memory reported.

Investigators who used this method are Gordon (12), Dudycha and Dudycha (11), Jersild and Holmes (28), Hersztejn-Korzehiowa (24), and Heinemann (17). All of these reports were published between 1928 and 1939.

Reminiscence. G. Stanley Hall (16) was the first to use this method as a genetic approach to the problem of memory. In 1899 he recorded a large number of memories dating back to the first 14 years of his life. Much later, Crook (8) published an account of two of his early memories, one of which dated back to his early infancy and the other to the time he was two years, eight or ten days old. Oberholzer (32) reported the memory of a schizophrenic patient which was used in his analysis. And Hennig (19), at the age of 63, recalled a large number of experiences he had during his life, the earliest of which dated back to his third year.

Biographical Reports. Two titles must be listed under this head, both of which are summary reports based on gleanings from an extended list of publications. Hurlock and Schwartz (27) examined biographical material of a psychological nature; De la Mare (29) took all of his material from literary accounts. Of the two, the former is the much more scientific account.

Check-List Method. The investigators using this method did not secure a written account of each memory reported, but merely an indication from the subject that he had a memory dating back to a certain age. This method was first used by Crook and Harden (9), and recently by Child (5), who took Crook and Harden to task. A somewhat similar method was used by Means (30), who was primarily concerned with the fears of college women and not with their memories as such. She had her subjects check names of objects and situations which were sources of fear and then had them indicate those which were remembered as causing fear in very early childhood. The obvious shortcoming of this method is that the investigator has absolutely no knowledge of the remembered experience itself. A respondent merely states: "I have a memory dating back to the time I was three years and six months old"; and that is that. The authors agree that occasionally an unscrupulous college student, with an aim to please, may contribute a fictitious account of an early experience, but this would seem to be even more likely when he merely makes checks on a cross-hatch without the bother of writing down a single detail.

PRECAUTIONS TAKEN TO CHECK THE ACCURACY OF THE MEMORIES

Obviously, no one can be absolutely certain of the accuracy of the details of a memory reported by another. Yet it is possible to increase the reliability of such reports by careful checking and questioning, as Dudycha and Dudycha (11) did. Unfortunately, most of the writers did not check as carefully as these authors. Obviously, careful checking was impossible for those using a mailed questionnaire, as Miles (31) and Colegrove (6), or a published one, as Henri and Henri (20, 21) used, for they had no contact with their subjects and in many cases did not even know their names. Also, as has been observed above, Crook and Harden (9) and Child (5) could not check on accuracy from their check-lists. Jersild and Holmes (28) made no check. Gordon (12) instructed her students to mark "certain" or "uncertain" after each memory. Henderson (18), using a direct-questioning procedure, was in a position to check his subjects' statements, but he does not make clear whether he did so. Both Hurlock and Schwartz (27) and De la Mare (29) comment extensively on the unreliability and lack of accuracy in the biographical method. Perhaps more confidence may be placed in reports of personal experiences made by trained introspectionists such as Hall (16) and Crook (9). Although the skepticism voiced by Brooks (4) is, in a measure, justifiable, we must not conclude that all of the reports are bad and that the investigation of childhood memories might just as well be abandoned.

THE SUBJECTS WHOSE MEMORIES ARE REPORTED

Most of the memories reported in the literature are those contributed by college students and adults. Investigators whose subjects were college or university students are:¹ Potwin (34), Gordon (12), Crook and Harden (9), Dudycha and Dudycha (10, 11), Means (30), and Child (5). Those who reported the memories of adults are: Hall (16), Günther (13), Crook (8), Hadfield (14, 15), Blonsky (3), Oberholzer (32), Hersztejn-Korzehiowa (24), De la Mare (29), Opedal (33), and Hennig (19). A number of investigators used both college students and some adults, often faculty members. These are: Henri and Henri (22, 23), Colegrove (6, 7), Henderson (18), Jersild and Holmes (28), Heinemann (17), and probably Miles (31). Hersztejn-Korzehiowa (24) used a group of high school students in addition to adults, and Benoschofsky (2) used a group of adolescent girls as subjects. Several investigators report the memories of young children: Hadfield (14) lists the memory of a boy of 6 or 7 years; Blonsky (3) in-

¹ Authors are listed in order according to publication date of their reports.

cluded memories of children 11 and 12 years old; Hurlock and Schwartz (27), in their biographical survey, included children up to 6 years; and Colegrove (6, 7) reported memories of children of various ages from 11 months up.

EARLY MEMORIES AND AGE

Average Age of Early Memories. Not all of the authors writing on early memories were interested in determining the age of the child at the time of his earliest remembered experience. However, those who do make mention of it seem to be in fair agreement that the earliest remembered experience for most people dates back to their third or fourth year.

Hall (16), for example, observed that he could remember almost nothing definite which dated back to the first two and one-half years of his life. Hennig (19), who professes to have a very good memory, claims that his earliest memory dates back to his third year. Jersild and Holmes (28), who collected accounts of early experiences that caused fear, report that only 21% of the remembered fear situations were encountered during the first five years of life. Means (30), who was interested in the fears of college women, states that only a few of the women recalled fears which originated during their third year of life.

Average ages for earliest memories reported are given in several researches. Miles (31) found that in 89 replies giving earliest memory recalled the average age was 3.04 years. Henri and Henri (22, 23) report the median for 118 memories as 3 years. Gordon (12) found a negligible difference between the sexes in this respect: the average age for men is 3.64 years and for women 3.4 years. Dudycha and Dudycha (10), in their first report on 200 memories, obtained an average age of 3 years, 8.5 months. Perhaps the most carefully controlled study with respect to age at the time of the earliest experience remembered is presented by Dudycha and Dudycha (11) in their second report. They present data on 233 memories (the latest of which is dated the fifth birthday) for which the assigned ages are presumably accurate to within one month. Of all the memories they collected, they employed only such as they felt the respondents could either locate accurately or nearly so. They found that many experiences recalled were assigned a definite date. Among these were: remembering the birth or death of a younger brother or sister, accidents, trips, moving from one location to another, Armistice Day in 1918, etc. Other experiences were located to within a few days by comparing dates of various events or by questioning parents and other adults. On the basis of this very careful investigation Dudycha and

Dudycha (11) concluded that the average age of the earliest memories reported by college students is 3 years, 7 months—the average for men is 3:8 and for women 3:6. As noted above, these figures resemble quite closely those reported by Gordon (12).

Memories Dating Back to the First Year. Although the majority of the earliest memories reported in the literature are of experiences had between the ages of three and five years, a few date back to the first year. Henri and Henri (22), in their pioneering study, report one memory dated six months, two dated eight months, and four dated one year. Crook's (8) personal memory of being nursed probably dates back to his first year. Hadfield (14) lists a number of memories which date back to the first year and which were revealed through analysis. One of these is a memory, reported by a woman, of being born. He does not claim that this was reported as a conscious memory of the ordeal of birth, but he does point out that the features of the undated memory reported fit perfectly with the known circumstances of her birth. If this is a true memory, then we may expect someone sometime to volunteer a memory of an experience had before birth. The latter certainly appears about as reasonable as the former.

Crook and Harden (9) found that their subjects reported earliest memories dating from nine months and up. Dudycha and Dudycha (11) were able to accept only 10 memories that dated back to the first year and which they felt were accurately located. A very early memory belonging to Henry James is cited by De la Mare (29). That such early memories as these are rare is further borne out by the fact that one investigator (29, p. 168), after reading 270 autobiographies, found that only 3 of these authors could recall experiences had before the age of two, and only 13 before the age of three.

SEX DIFFERENCES

Although both sexes contributed memories to most of the studies included here, only a few of the writers make mention of sex differences. Colegrove (6, 7) called attention to certain sex differences at various ages. For example, he found that among 10- and 11-year-olds motor memories decrease for the girls and increase for the boys; and among 12- and 13-year-old girls memories for novel occurrences decrease, whereas those for protracted experiences increase. This latter fact he also observed among girls of 16 and 17, but the reverse was true for boys of this age. In general he

found that motor memories, memories of father, grandparents, gifts, and fears are recalled about equally by the sexes, but women have about twice as many memories for playthings. As for memories of school experiences, he found that males report a slightly larger number. Males appear to be more egocentric, for he states: "Females have the better memory for sickness and accidents to others. Males have the better memory for sickness and accidents to self. The activities of others are best recalled by both males and females in the closing period of their lives" (6, p. 236).

Potwin (34) found that 73.3% of the women and only 28% of the men reported memories of single occurrences. The frequency for reporting repeated occurrences was about the same for the sexes—22.6% for the women and 24% for the men. This writer noted that 68% of the women remembered very minor details, whereas only 12% of the men reported such memories.

Three studies, which report average ages for earliest memory recalled, agree that, on the average, women recall earlier memories than men. Potwin's (34) average ages for men and women are 4.4 and 3.01 years; Gordon's (12) are 3.64 and 3.4 years; and Dudycha and Dudycha's (11) are 3 years, 8 months, and 3 years, 6 months.

Dudycha and Dudycha (11) found sex differences with regard to affective states accompanying early experiences remembered. They found that 37.3% of the male memories and only 21.2% of the female memories involved fear, whereas 23.9% of the male memories and 33.3% of the female memories involved joy. They found anger, shame, and guilt to be more common in memories reported by women than in those given by men. No marked sex differences were found for experiences which involved such emotions as wonder, curiosity, sorrow, disappointment, and pain. Jersild and Holmes (28), on the other hand, conclude that none of the sex differences between remembered fears can be considered as outstanding.

SENSE MODALITIES INVOLVED IN EARLY MEMORIES

Very few of the researches examined here make mention of the sense modalities of the memories reported. Miles (31), commenting on the memories she collected, says that "the child's world appears to be a world of sensations, and chiefly sensations of sight." Henri and Henri (20, 21, 22, 23) state that the visual sense predominated in the majority of cases and that auditory memories were not only fewer in number, but appeared to be less distinct. Colegrove (6, 7)

comments on this problem more extensively than any other author. Although it is not quite clear how he determined the sense modality of so many memories, he lists the following senses as represented in the memories of children under five years: visual, auditory, gustatory, tactual, thermal, and pain. He also observed that visual and auditory memories increase noticeably for males in the third decade of their life and decrease for females in this period. And, finally, he states that visual memories comprise 27.3% of all memories reported by men and 31% of those contributed by women.

Potwin (34) classified all the memories he collected under 17 headings, four of which represent sense modalities. Under these he classified 21 as visual, 9 under pain, 5 under gustatory, and 1 under auditory. In his data we find the same trend as that noted by Colegrove, namely: men contribute more visual memories than women. The preponderance of visual memories is also borne out by Hersztejn-Korzehiowa's (24) data. Dudycha and Dudycha (10) report that they had one subject who contributed four memories, all of which were of odors.

INTELLIGENCE AND EARLY MEMORIES

Hollingworth (26, p. 143), in commenting on the fewness of very early memories, observes that where they do occur it is quite probably due to the fact that the child's mental age is far ahead of his chronological age. Actually there is very little data on this point. Dudycha and Dudycha, following Hollingworth's suggestion, sought to determine the relationship between earliest memories and age at which the subjects began talking. This, however, had to be abandoned for want of valid data on the acquisition of language. Dudycha and Dudycha (11) then correlated intelligence test scores and age of earliest memory reported by 129 subjects and found that the coefficient was practically zero. In spite of this, they do call attention to the fact that, of 10 subjects reporting memories between the first and second year, eight have intelligence scores which are above average and five are in the upper quartile of the group.

Very recently Child (5) has published a brief note on this problem which is even less in accord with Hollingworth's prediction. Child obtained a coefficient of .38 between scores on Otis Self-Administering Test of Mental Ability and age of earliest memory for 32 college men. This would imply that the more intelligent

place their earliest memory at a later age than the less intelligent.

In an earlier section we observed that most of the subjects who contributed early memories to the various researches were college students, faculty members, and other professional people. Obviously, these subjects do not represent the general population, for, from the point of view of intelligence, they constitute a select group. Although this fact makes some of the above observations less sure, it may still be true that a fairly high negative correlation between earliest memory and intelligence exists in a population which is distributed normally as to intelligence. Before this question can be settled, however, further research is needed.

RACIAL DIFFERENCES

Apparently, all of the subjects who contributed memories to the various studies were of the white race, except Colegrove's (6, 7). Since Colegrove received replies to his questionnaire from 1372 whites, 182 negroes, and 104 American Indians (representing 25 different tribes), he felt justified in distinguishing certain racial differences, particularly concerning negroes and Indians. Concerning the former he writes: "The story of hardships, wrong and suffering is deeply imprinted on many memories." And again: "It was to be expected that the negro females would place emphasis upon dress. The racial experience also crops out." Similarly, concerning the Indians he states: "Many of these memories may be termed crystallized racial experiences, and the question arises whether the memory tone is not modified by atavistic tendencies." Concerning the feeling tone of their memories he writes: "Their memories for pleasant and unpleasant occurrences savor of racial experiences." No doubt if a similar comparison were made today (40 years later), rather different observations would be made.

AFFECTIVE EXPERIENCES AND EARLY MEMORIES

Pleasantness and Unpleasantness. Colegrove (6, 7) was apparently the first to ask the question: "Do you recall pleasant or unpleasant experiences better?" Since Colegrove raised this question, a number of other investigators have attempted to supply an answer. Unfortunately, there is little unanimity in their conclusions. Hall (16) reports that most of his memories were pleasant impressions. Both Colegrove (6, 7) and Potwin (34) claim that most of the memories they collected were of pleasant events. On the basis of Colegrove's results, Hollingworth (25) wrote an article supporting this view which he entitled "The obliviscence of the disagreeable." Henderson (18) immediately challenged Hollingworth's stand in an article entitled "Do we forget the disagreeable?" To support his contention, Henderson collected 1000 memories from

10 subjects. His results show that 33.1% of these memories were marked *disagreeable* and 55.1% were marked *agreeable*. Although he is correct in stressing that all unpleasant experiences are not forgotten, we cannot help noting that even he reports that more than half of his memories were marked *agreeable*. Other writers who support Hollingworth's general position are Adler (1) and Heinemann (17).

On the other hand, three reports contend that unpleasant memories are in the majority. Gordon (12) states that she found "a preponderance of unpleasant over pleasant recollections." This she found to be particularly true for men who report more than twice as many unpleasant as pleasant memories. She concluded by saying: "One thing can be affirmed with certainty about the group which this report represents, namely, that there is no general tendency to write down as early recollections the pleasant rather than the unpleasant" (12, p. 132). This contention is also supported by Hersztein-Korzehiowa (24). Finally, Benoschofsky (2), who questioned several hundred adolescent girls concerning their happiest and unhappiest reminiscences, was impressed with the large number of pessimistic and gloomy memories which they reported.

Thus we find that, as this matter stands now, the reports are better than two to one in favor of the recall of pleasant memories as against unpleasant ones.

Emotions That Accompany Early Memories. There is considerable agreement among the writers that emotions usually accompany early, remembered experiences. Miles (31, p. 555) points out that "an emotion of some sort is evidently what made the experiences originally impressive." Likewise, Henri and Henri (22, 23) give "strong feelings" as the reason for remembering early experiences. Blonsky (3) says that deep emotional experiences are not necessarily the cause for recall—rather, certain emotions that have to do with personal safety. Finally, Dudycha and Dudycha (10, 11), who were primarily interested in finding the emotions which accompany memories of early childhood experiences, found that some emotion accompanies nearly every early memory.

Colegrove (6, 7) makes only a few scattered remarks about emotions. Crook (8), reporting his personal experience, could not distinguish whether he experienced fear or jealousy, but was certain of his repulsion. Night fears and horror, as revealed by biographies, are discussed in two chapters by De la Mare (29).

As was noted above, Dudycha and Dudycha (10, 11) made the most extensive study of the relationship of emotions to early memories. In their first report on 200 memories, fear accompanied 39.5% of them; joy, 24%; anger, 8.5%; wonder and awe, 4.5%; sorrow and disappointment, 4%; various emotions, 8.5%; and incidents with no emotion indicated 11%. In their second and more carefully controlled study of 233 memories, the results were much the same. Fear accompanied 30.4% of the memories; joy, 27.9%; anger, 10.3%; wonder and curiosity, 8.1%; pain, 5.2%; shame and guilt, 2.6%; miscellaneous emotions, 3.8%; and memories with no emotion indicated 5.2%.

Jersild and Holmes (28) and Means (30) were interested in the one emotion of fear. Jersild and Holmes report that 21% of all fears are described as first appearing between birth and five years; but Means states that only 9% of the fears she collected first appeared between the ages of one and six, and only six memories were of events occurring before the third birthday.

Although all of the 10 fear-inspiring situations given by Dudycha and Dudycha are found in the longer list given by Jersild and Holmes, the frequencies with which they give rise to remembered experiences in very young children are by no means the same in the two investigations. Dudycha and Dudycha (11) report that the three situations which gave rise to the largest number of fears were: animals, punishment, and strange people and situations. Jersild and Holmes (28), on the other hand, list the following for the 0-5 age range: "specific objects and situations, noises, falling and high places, strange objects and situations, and strange persons."

EARLY MEMORIES AND PSYCHOANALYSIS

Hadfield (14, 15) and Oberholzer (32) both illustrate rather well the psychoanalytic point of view and technique. The former stresses the point that feelings as well as thoughts may be recalled. He believes that the reason people doubt the authenticity of such recalled feelings is that they must be verbalized when described for others, and this makes them appear entirely too sophisticated for the observations of an infant. On this point he says:

The infant, of course, can not express his feelings in any other way than by emotional expression. The adult, on the other hand, recovering in analysis these same feelings, may at first be incapable, like the child, of doing anything but feeling them, but then becomes capable of putting the feelings into words. *The result may be perfectly true interpretation of its*

infantile experience, though the language and thought of which is far too sophisticated for such a child to enunciate or even to think (14, p. 102).

Other supporters of the psychoanalytic point of view are Adler (1) and Opedal (33). On the other hand, Blonsky (3) takes issue with certain of the psychoanalytic assumptions.

A more experimental approach to this general problem is found in the investigation of Crook and Harden (9), who undertook to test the hypothesis that the repression of childhood memories is associated with neurotic personality. On the basis of coefficients of correlation between the number of early memories recalled and Pressey X-O test scores, and the earliest memories and Pressey scores, they conclude:

The more emotionally stable an individual is, as indicated by a low Pressey score, the greater number of memories he retains from the first six years of his life and the earlier the age from which he retains the first memory (9, p. 255).

Child (5), who took exception to a number of assumptions made by Crook and Harden (9), sought to test the hypothesis himself. He used three groups of students (290 in all) which were given one of the following tests: Thurstone Personality Schedule, Clark Revision of the Thurstone Personality Schedule, or the Pressey Interest-Attitude Test. Scores obtained on these tests were correlated with the total number of memories and with earliest memory reported. Each of the 10 coefficients obtained was small, and none deviated significantly from zero. Child concludes that "no significant association obtains between the purported measures of degree of infantile amnesia and degree of neuroticism."

Since these two researches present contradictory results, even though they employed similar methods, we can hardly say that either provides a decisive answer to the problem.

SUGGESTIONS FOR FURTHER RESEARCH

With the shortcomings and inadequacies of these studies of childhood memories in mind, several research problems and improvements suggest themselves. In any further studies of early memories great care should be exercised in securing the details of the experience remembered and in locating the memory according to the child's age. The latter point is particularly important. It is surprising how accurately memories can be located in time if the subject is carefully questioned and directed in his recall. Further,

the present authors suggest that the memories included in any study be limited to those which occurred in the first five years of life. This seems reasonable, since the average earliest memory is somewhere in the fourth year.

Problems which could be studied with profit are the following: (1) A study should be made of early memories recalled by subjects varying in intelligence, namely: dull, average, and gifted. (2) An examination of the relationship of language acquisition to early memories would throw further light on the problem of intelligence. (3) A careful report on the similarities and differences between the memories recalled by subjects belonging to different age groups (preadolescent, adolescent, mature, and senescent people) would be interesting. (4) More light is needed on the relationship between early memories and various personality traits.² (5) Experimental research relative to the psychoanalytic point of view is sorely needed.

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² The authors found one subject who reported four early memories, all dealing with situations which caused anger. Does this throw light on her personality?

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PROCEEDINGS OF THE THIRTY-SIXTH ANNUAL
MEETING OF THE SOUTHERN SOCIETY FOR
PHILOSOPHY AND PSYCHOLOGY

NORMAN L. MUNN, SECRETARY, VANDERBILT UNIVERSITY

The Thirty-sixth Annual Meeting was held in Washington, D. C., April 10 to 12, 1941, with the University of Maryland as host institution. Local arrangements were made by a committee consisting of Thelma Hunt and Christopher Browne Garnett, of George Washington University, and John G. Jenkins and Fritz Marti, of the University of Maryland. All meetings were held in the Wardman Park Hotel.

The Council of the Society met in executive session on Thursday at 8:00 P.M., with President John Paul Nafe presiding. Other Council members present were Emily S. Dexter, Marjorie S. Harris, B. von Haller Gilmer, Lewis M. Hammond, William P. Warren, and Norman L. Munn.

Two concurrent sessions in philosophy and one session in psychology were held on Friday morning. In the afternoon there were two concurrent psychology sessions and one philosophy session. Eighteen philosophy and 19 psychology papers were delivered during these sessions. Chairmen for the philosophy sessions were Fritz Marti, William Preston Warren, and Christopher Browne Garnett. Psychology sessions were presided over by John F. Dashiell, John G. Jenkins, and Thelma Hunt.

The annual banquet was held Friday at 7:00 P.M. in the Continental Room of the Wardman Park Hotel. Following the banquet an address of welcome was given by President Byrd, of the University of Maryland. Dr. John Paul Nafe then delivered his presidential address, "The Quantification of Psychology." The presidential address was followed by refreshments provided by the University of Maryland.

The joint session was held on Saturday morning from 9 to 11, with President John Paul Nafe as chairman. Two of the five papers presented were by invitation. Dr. Albert G. A. Balz traced the history of philosophy in the Society during its 35 years of existence. Dr. J. B. Miner provided a similar survey of psychology, but with special emphasis upon the last 10 years.

The annual business meeting convened at 11:30 A.M., with President John Paul Nafe in the chair.

MINUTES OF THE ANNUAL BUSINESS MEETING

The minutes of the Thirty-fifth Annual Business Meeting of the Society as published in the *Psychological Bulletin*, 1940, Vol. 37, No. 8, were approved.

The annual report of the Secretary was approved as read. It related tasks performed by the Secretary during the year. The Secretary reported that two members resigned and six were dropped for nonpayment of dues.

The Treasurer's report, audited by Frank Geldard, was approved as read. Assets and receipts totaled \$1,319.02 and expenses \$337.60, leaving a balance of \$981.42. This represented a net gain of \$83.95 over the preceding year.

Dr. Albert G. A. Balz, Chairman of the Standing Committee on Philosophy, presented an informal report in which he described a project involving collection of biographical and bibliographical data on persons who have taught, or who are at present teaching, philosophy in the South.

Under the heading of unfinished business the Secretary reported that the Council had reconsidered the custom of confining the Society's meetings to hotels. The Council would, in future, be guided by the facilities offered by the host institution rather than by the nature of hotel accommodations alone. The Secretary also reported that Dr. Peter Carmichael's resolution concerning the appointment of Bertrand Russell to the College of the City of New York, which was committed to the Council at the New Orleans meeting, had become obsolete, the reason being that Bertrand Russell had accepted another position during the year.

On the Council's recommendation, the following new members were admitted to the Society: R. W. Browning, University of North Carolina; Hulsey Cason, Medical Center for Federal Prisoners, Springfield, Missouri; J. A. Clark, Woman's College, University of North Carolina; P. M. Fitts, University of Tennessee; Gerard Hinrichs, Xavier University; M. M. Jackson, University of Virginia; H. W. Karn, University of Pittsburgh; E. H. Kemp, Duke University; H. K. Kuhn, University of North Carolina; John Ladd, University of Virginia; Martha Lucas, Chevy Chase, Maryland; R. F. Martin, Carnegie Institute of Technology; D. J. Mofie, North Carolina State College; Max Schoen, Carnegie Institute of Technology; M. R. D. Singer, University of Virginia; F. G. Tice, University of Virginia; W. C. Trueheart, University of Virginia; Mary Williamson, Hollins College; J. L. Woodruff, Duke University.

On recommendation of the Council, Fritz Marti, of the University of Maryland, was elected President of the Society. Wayne Dennis, of the University of Virginia, and Harold N. Lee, of Tulane University, were elected to the Council for the period 1941-1944.

The following resolution was presented by the Council and approved by the assembled members of the Society:

Be it resolved that, in appreciation of his long and faithful service to the So-

society, Dr. Herbert C. Sanborn be appointed Honorary Member of the Council for life.

A recommendation from the Council to accept an invitation to hold the 1942 meeting in Nashville was approved by the Society. The invitation came from Vanderbilt University and George Peabody College for Teachers.

Dr. Fritz Marti read from the floor a statement concerning the forthcoming publication by Mr. Piest of translations of books in philosophy. Dr. L. O. Kattsoff reported that the University of North Carolina Press is to carry out a similar project. The Society approved a resolution expressing deep interest in these ventures.

A resolution presented from the floor by Dr. L. O. Kattsoff concerned the attitude of university administrators toward instructors who are drafted and toward candidates for university appointments whose draft numbers are low. After discussion from the floor, this resolution was referred to the Council for its immediate action.

Dean Marten ten Hoorn, Chairman of the Resolutions Committee, read a resolution thanking the University of Maryland, George Washington University, and the Wardman Park Hotel for their contributions toward the success of the meeting. The resolution was adopted by unanimous vote and the meeting adjourned.

PROGRAM

Friday Morning Session, April 11

PHILOSOPHY

Section I

FRITZ MARTI, Chairman

Logical Classes and Universals. LEWIS M. HAMMOND, University of Virginia.

With the rise of modern symbolic logic or logistics, emphasis has been placed more on postulates and formulae for expressing relations between logical terms, and less on an understanding of the signification of these terms. This development of logic on its purely formal side, divorced from any consideration of epistemological and metaphysical problems, leads to great efficiency and success in one direction; but it is purchased at the cost of distorting the problem concerning what logical terms signify. This problem is usually handled in logic by saying that a universal term denotes a class of objects, where a class is defined as a "collection of individuals, to each of which a particular name or description may be applied."^{*}

In what sense is such a class term a universal? It is predictable of many things, and thus apparently satisfies the conditions of universality. The

* Boole. *Laws of thought.* P. 31.

difficulty lies concealed under the ambiguity of the term 'predicable,' because terms are predicable of things in three ways: univocally, equivocally, and analogically. As developed by Aristotle, a term must be univocally predicable of many things before it is a proper universal, fit to enter into logical demonstration. That is, it must signify an essential, intelligible sameness common to several individuals, a sameness of genus, species, or difference, which is understood by one rational concept.

But the modern class term reduces this unity of species to an aggregate of individuals by emphasis on their multiplicity and otherness, so that the common name becomes merely a convenient, conventional tag or label, whether the designation is in extension or intension, by enumeration or by definition. In its extreme form, the class term thus becomes a *flatus vocis*, predicated equivocally by the individuals in that class. Thus, knowledge at the level of scientific universality is impossible except as a logical game without 'existential' reference; concepts are reduced to words whose only meaning is the immediate datum of sense to which they correspond.

Evolutionary Dialectic Rationalism. LOUIS O. KATTSOFF, University of North Carolina.

Rationalism has frequently implied linear inference when viewed epistemologically and has been confused with Idealism when viewed ontologically. We here view Rationalism as the doctrine which asserts that knowledge and object are distinct, but each exemplifies the same set of categories. Knowledge and object develop through these categories in a fashion that is not explicable in terms of simple linear cause-effect relation, but is more akin to dialectic. However, it is necessary to reinterpret dialectic and its affinity to evolutionary development. Hegel's use of the basic principle of evolution caused him to see each triad as a "transcendence," i.e. a repetition at a higher level of the preceding triad. But we now know the case is not as simple as that. Each level of categories does not repeat the preceding level, but it does presuppose it. There is actually a sort of theory of types involved here.

We can distinguish five realms of categories, although nothing hinders the occurrence of other realms in the future. These are realms of (1) *esse*, (2) *natura*, (3) *anima*, (4) *sorius*, and (5) *spiritus*. The development from one realm to the next is evolutionary.

We view reality as matter, mind and a unifier, the categories.

Glanvill's Appreciation of the Method of Doubt. JAMES ALBERT PAIT, University of Virginia.

Joseph Glanvill (1636-1680) represents a point of view toward science and philosophy which was immediately affected by Descartes. This point of view is examined in relation to this understanding of the Cartesian method of doubt. An examination of Glanvill's early theory of knowledge reveals a skepticism based upon the imperfection, variability, and relativity of the senses, false connections of perceptions occasioned by the error of the imagination, and the deception of reason by prejudice, passion, and wrong opinion. How, then, can we have science? Descartes' quest of certainty involves a rational acknowledgment of uncertainty, result-

ing in the use of the ontological argument to ground the validity of sense and to establish the criterion of clear and distinct ideas. When Glanvill considers the method of doubt, he renounces his skepticism in favor of the view that the senses do not deceive. But doubt is held to be an attitude within science, not a propaedeutic to science. The method of doubt is seen to be a decisive factor in Glanvill's final acceptance of an empirical method for science, and the infallibility of sense, posited as an innate idea, is seen to serve the function of the ontological argument in Glanvill's use of the method of doubt.

The Meaning of "Becoming" in Plato. W. C. TRUEHEART, University of Virginia.

That the sense world is a world of "becoming" is one of Plato's basic presuppositions. It is surprising, therefore, to find that among commentators and students the old Heraclitean remark, "It is impossible to step twice into the same river—or even once," generally passes muster as an explanation of its meaning. From the philosophical point of view the important thing about "becoming" is not its evanescent character, but the nature of the entities which compose it and the relations which hold between them.

It is held that the notion of "becoming" is neither simple nor self-evident, and the paper attempts to state and explain the subordinate assumptions involved. These assumptions are: (1) that there is something, i.e. an entity, which comes to be; (2) that time is of the essence of such an entity; and (3) that there are many entities. Assumption (1) distinguishes "becoming" from a pure flux such as the Receptacle of the *Timaeus*. Assumption (2) describes the type of entity required by a "world of becoming." Assumption (3) explains itself, but it might be remarked that it does not amount to a claim that Plato is ultimately a pluralist.

Individualism vs. Individuality. GEORGE MORGAN, JR., Duke University.

On the widely held assumption that individuality is a cardinal value, to show that individualism is, in effect, hostile to individuality is to raise a serious difficulty. Such a view is supported by the rise of mediocrity during the reign of individualism and by the unconcern of many professed individualists. John Dewey, however, has consciously reoriented individualism toward the universal enhancement of individuality. Yet his conception of the development of individuality overstresses continuity to the neglect of exclusive style, and this leads to corresponding flaws in his defense of equality (as incommensurability), freedom (as intelligent release), and fraternity (as participation), which he considers the moral essence of individualism. Individuals are unequal in potential and actual individuality. To give all of them an equal chance to find the unique opportunities commensurate with their own incommensurabilities would entail making society so fluid as to be formless, therefore uncongenial to the ripening of individuality in anybody. The view that mutuality and individuality develop together without limit ignores the fact that the centripetal forces of association will overwhelm individuality unless balanced by powerful tensions which tend to keep men apart.

Universals and the Philosophy of Religion. ROBERT LEET PATTERSON,
Baltimore, Maryland.

Intimately connected with the problem of universals are the following three problems which concern the philosophy of religion: (1) Do the principles of religion hold good always and everywhere? Is a philosophic universalism defensible? Or does some actual event play the decisive role? And must some particular historic faith be therefore accepted as unique and final? (2) What is the place of revelation in religion? How is it to be distinguished from intellectual intuition? (3) What are the presuppositions of the fundamental types of religious life and thought—mystical, ethical, sacramentalian, etc.? To what extent are they mutually antagonistic or mutually compatible?

Epistemology has fluctuated between two poles, that of nominalism, on the one hand, and, on the other, that of an extreme realism for which universals have being both *in re* and *ante rem*. For our present purpose it will be assumed that this antithesis is exclusive, and that all intermediate theories are reducible to one of these two. The contention of this paper is that, if religion be dealt with in terms of Nominalism, the logical result of the inability to vindicate *a priori* knowledge will be a tendency away from universalism toward some particular orthodoxy, toward the acceptance of some historic revelation, and a concurrent depreciation of all other claims to religious insight, with the ensuing establishment of an authoritarian or illuminative ethics, and a sacramental doctrine. On the other hand, the tendency of a realistic interpretation, inasmuch as it provides a basis for *a priori* knowledge, will be toward universalism and away from particularism, toward the development of a view of intellectual or "nonperceptual" intuition which will in great measure eliminate the demand for revelation and so reduce the problem to one of subordinate importance, toward an intuitive ethics and a type of mysticism which will be wholly compatible with rationalism and unfriendly to extreme sacramentalianism.

Section II

WILLIAM P. WARREN, Chairman

Concerning Philosophy in Argentina. MARJORIE S. HARRIS, Randolph-Macon Woman's College.

Even before Argentina freed itself from Spanish domination, Scholasticism was losing its hold on philosophic thought. The concepts and the goals of the French Enlightenment were intriguing serious-minded young patriots. After Argentina won its independence, fundamental notions of the French Enlightenment eventually came to be regarded as too abstract. Though effective stimuli to gaining freedom from outer restraint, these concepts did not furnish guidance for achieving inner freedom. Furthermore, these concepts seemed too rationalistic for the dynamic spirit of these vigorous people, so conscious of their developing life. Herder's viewpoint came to be regarded as more significant in view of Argentina's geographical and historical position and its cultural mission. In fact, German Romanticism, in general, was received with favor as

closer to the needs of the nation's developing thought. This influence, in turn, gave place to German Positivism, which persists today.

It must be noted also that thinkers of other lands have influenced philosophic thought in Argentina—especially English thinkers, such as Bentham and Spencer and even our own Royce. It must be emphasized, however, that external influences have always been transformed by Argentinian thinkers so that philosophic developments, stimulated from without, have always borne an Argentinian stamp.

Is History a Science? LEONARD J. ESLICK, Drake University.

No science is concerned with the individual *qua* individual. There is no scientific knowledge of unique facts, taken in their aspect of uniqueness. But history, as a representation of human actions, seems committed to the recording of that which is individual and contingent. How, then, can history be a science?

For history to become science, human actions must be more than an unintelligible series of "brute facts," to be described in an incomplete and aimless way by positivist pedantry. Absolutely objective description or recording is in any case an illusion. Further, human history must exhibit something more than the material necessity claimed for it by dialectical materialists, and other determinists, economic or otherwise. History cannot be successfully reduced to such sciences as economics (Marx, Beard), sociology (Comte, Tolstoy), biology (Spengler), physics (Henry Adams), or theology (Calvin). Instead, history exhibits the intelligible necessity which arises out of free decisions. We choose freely, but there are necessary consequences, in the moral order, following from our choices. It is this kind of intelligible necessity which the true historian makes apparent in the welter of fact. Thus history, as a science, is ultimately based upon ethics, as a science. The historian's aim, like that of the writer of tragedy, must be the discovery of intelligible lines of action. Hence the problem of history is considered on the background of Aristotle's *Poetics*, and the true historian is seen to achieve universal truth in the same way in which the poet does. The reason for the greatness of Herodotus and Thucydides as historians is thus made evident.

The Purge in National-Socialist Philosophy. MARTEN TEN HOOR, Tulane University.

A remarkable feature of the recent feverish activity in German National-Socialist philosophy is the determined attempt to "purify" the history of German philosophy. This has taken two forms: (1) the "purging" of those philosophers whose fundamental doctrines are in conflict with National Socialism and (2) attempts to trace as far back as possible a pure German—that is, a pure National Socialist—line of descent among German philosophers. The following principal criteria are applied in (1): (a) the dogma of blood and race, or racial particularism; (b) the dogma of the purely political existence of the individual, or totalitarianism; and (c) the dogma of "organisches Denken," or antirationalism. Descartes, Kant, and Hegel are examples of philosophers who are wholly or in part condemned because of their "universalistic" and rationalistic doctrines and

tendencies. Antiuniversalism and the "Intensität-Weltweite" polarity are examples of criteria employed in the attempts to establish a pure German "succession" from Albertus Magnus to Schleiermacher and Nietzsche. It is clear from all this that National-Socialist philosophers have determined to prove that what is true in philosophy for Germans is true for Germans *only*.

The Concept of Peace. WILLIAM S. WEEDON, University of Virginia.

The problem of determining a conception of Peace which is adequate to an actual world is one which presents peculiar difficulties, but is of basic importance to all social and political theory. It is, in the first place, insufficient to present a conception of Peace which is fundamentally negative in character; thus Peace as "the absence of War," or of this or that type of constraint, fails to do justice to the nature of man. The definitions arising from such considerations virtually reduce man to the level of the oyster. In this connection it is interesting to note that in many "primitive" languages the word for "Peace" is identical with the word for "Death." It is, in the second place, inappropriate to suggest a conception of Peace which has application only in Heaven or in some ideal world or state. Such Utopian notions must, however, serve as points of departure in the investigation here proposed, and this paper takes its origin from the *Republic* of Plato.

On the Attempt to Bring Rational Control Into the Sphere of Moral Judgment. ROBERT W. BROWNING, University of North Carolina.

We are concerned not with the existence, but with the content, of moral judgments. The meaning of some moral judgments is not simply that the judge has a certain feeling. Such moral judgments cannot be grounded in pure reason. Nor simply by deduction from an ultimate moral law, for then one is referred back to the procedure by which the law is established. If a universal or rational intuition be ruled out, we seem to be left with something like a moral sense or intuition of particular moral properties, on the one hand, or something loosely labeled "induction," on the other. An induction regarding values posits that we discern something of the valuational aspects of events. There is not of necessity entailed an intuitionism which would claim all intuitions to be certain. There is a sort of interaction of a present evaluation with the existing economy of evaluations. If anything is to be called "practical reason," we invite the thought that it should properly be inclusive of both the existing economy of valuations, funded in one's experience, and that insight, intuition, appreciation he may have on being confronted with possible new properties in experience.

PSYCHOLOGY

JOHN F. DASHIELL, Chairman

A Reciprocal Relationship Between Sensory and Attentional Factors in Reaction Time. V. COUCHERON JARL, University of Virginia.

The customary procedure, when examining the effect of a stimulus variable on reaction time, has been to keep each stimulus value constant

for several successive reactions. Such regular order implies the assumption that the subject's preparatory adjustment (attention) is comparable for each reaction series, regardless of the sensory nature of the stimulus.

To eliminate any differential influence of the sensory factor upon attention, the various stimuli were presented in irregular order for six subjects giving simple reactions to three visual stimuli of different brightness. In parallel series with the same subjects the regular order of stimulus presentation was used.

The irregular order gave increase in speed with greater brightness. With the regular order, however, the upper brightness tended to give longer average reaction time than the middle; relative to the results of irregular order, speed of reaction had *increased* for the lower and middle brightness, but *decreased* for the upper.

The results may be interpreted in terms of reciprocity between sensory adequacy of stimulation and attention or effort on the part of the reacting organism.

Individual Differences in Fusion Frequency as an Indicator of Visual Sensitivity. F. G. TICE, University of Virginia.

The frequency at which intermittent flashes of given intensity apparently fuse and give rise to a steady sensation varies greatly in different observers. For a moderate intensity one observer's fusion frequency may be 25% higher than another's. Such differences remain when adaptation and pupil size are controlled. The precision with which untrained observers make settings using the method of average error is such that means based on as few as 10 readings may be significantly different though differing by only half a flash per second. The factors responsible for these differences are as yet largely undetermined. It is suggested that the finding of co-variables will throw light on the problem. Literature is cited with respect to the significance of age, pigmentation and general condition of the eye, visual acuity, and the absolute threshold. Procedures are described whereby individual differences in certain other visual processes were measured during the same experimental session in which the observer's fusion frequency was determined. Processes investigated included differential sensitivity, persistence, and an aspect of action time. Intercorrelations are presented.

Cold Sensitivity and Its Relation to the Neurovascular Mechanisms and Other Structures of the Skin. B. VON HALLER GILMER, Carnegie Institute of Technology.

Direct excision experiments have failed to substantiate the conventional claim that cold sensitivity of the skin is mediated by a specific sense organ. An analysis of histological material taken from tissue highly sensitive to cold stimulation and material taken from surgical specimens leads to the contention that cold sensitivity is in some way related to the neurovascular mechanisms of the skin and adjoining structures. Extensive studies of the distribution of cold "spots" show that there is a relationship between the openings of sweat-gland ducts and the surface areas of maximum sensitivity. Data on the depth and concentration of neurovas-

cular tissues, the nature of sweat-gland structure, and some considerations of the temperature insulation properties of the skin are presented in support of a neurovascular theory of cold sensitivity.

The Effect of Skin Temperature on Cutaneous Pain. JOSEPH WEITZ, Sophie Newcomb College, Tulane University.

Using as a stimulus a 1-mm. electrode attached to an induction coil as a source, pain thresholds were obtained on the dorsal surface of the forearm. After normal thresholds had been measured, the skin temperature was raised by means of a small radiant heater, and a series of thresholds were taken during this warming period. It was found that pain thresholds dropped to a minimum with increasing skin temperature, but then rose from this point with continued heating. These results are strikingly similar to those obtained by the writer in an earlier study of the effect of temperature on vibratory sensitivity and seem to fit the theories postulated in that connection.

Imagination. EMILY S. DEXTER, Agnes Scott College.

The question is raised as to what psychologists really mean by *imagination*. Investigation of texts reveals both confusion and contradiction. It seems to be synonymous with "thought process." Under such conditions, no "test" of imagination would be possible, for there would be no accepted criterion against which to validate a test. That such is the case seems to be indicated by a study of 130 students, about half of them in college and the other half in high school. No significant correlations between tests of imagination and teachers' estimates of the trait were found when the element of ordinary academic intelligence was eliminated. Neither was any relation found between imagination and such other traits as delinquency and neurotic personality.

Friday Afternoon Session, April 11

PSYCHOLOGY

Section I

JOHN G. JENKINS, Chairman

Factor Analysis of Oral Group Rational Learning Ability. HENRY F. DICKENSON, Lincoln Memorial University.

The purpose of this experimental investigation was to determine which of 25 separate abilities correlated most significantly with ability as measured by an oral group rational learning test. The subjects consisted of 2000 high school and college students who took the author's own oral group rational learning test. Certain groups of these subjects took as many as 25 other tests in addition to it, such as: Iowa Reading, Otis Intelligence, Sones-Harry High School Achievement, Tiegs and Clarke Progressive Achievement, a mental multiplication test, a deception test, a discriminative persistence test, etc. Low, but reliable, coefficients of correlation were found between oral group rational learning and quarters spent in school ($r=.21$); total achievement tests ($r=.25$ and $r=.19$);

following directions ($r = .15$); reading interpretation ($r = .16$). No relationship was found for various vocabulary tests, capitalization, punctuation, reading organization, spelling, word and sentence meaning, or grammar. The most significantly related factors were: high school grades ($r = .67$); mental multiplication ($r = .60$); discriminative persistence ($r = .41$); intelligence ($r = .31$); number concepts ($r = .37$); problems ($r = .26$); penmanship ($r = -.45$); and symbols and rules ($r = .18$).

An Evaluation of Sleep Motility Criteria. M. M. JACKSON, University of Virginia.

Opinion has been divided as to the best method of treating sleep motility data. Previous criteria are based upon low-speed recordings that give only the frequency of movement. We propose an index derived from the actual duration of motility divided by the time asleep. A high-speed kymograph that would give the duration of each movement was employed. From the same records earlier motility criteria are derived and compared with values obtained from the more precise determinations.

The heart rate is recorded on the same records by means of a cardiotachometer. One of the probable stimuli for movement in sleep is the congestion resulting from restriction of circulation in certain areas. The heart rate changes give evidence that this is an effective stimulus for movement. The heart rate shows an anticipatory acceleration that begins about six minutes before movement and increases rapidly in the half-minute just prior to movement. One-half minute after movement a minimum occurs, and a slow return to the previous level is effected within five minutes.

A Study of the Ability to Awaken at Assigned Hours. J. H. ELDER, University of Virginia.

The purpose of this investigation was twofold: (1) to seek experimental confirmation of the widely held belief that some individuals, at least, have an accurate time sense during sleep, and (2) to determine the effects of an assigned time for waking on motility during sleep.

From a class of approximately 100 students in introductory psychology only 11 were found who believed they could awaken in the morning at any assigned hour. Different schedules of assigned hours for waking were used in order that cues, such as passing trains, arrival of the milkman, traffic noises, sounds from public clocks and whistles, etc., could not be used as temporal reference points.

Methods of analysis, similar to those employed in previous sleep studies, were used in treatment of the records. Preliminary study, using seven of the volunteers as subjects, indicates that some individuals do possess an ability to awaken at assigned hours. When compared with "normal" sleep, some of the records show interesting differences in motility before and after the assigned waking hours.

Sleep Motility in Student Pilots. F. A. GELDARD and H. H. MANCHESTER, Jr., University of Virginia.

Records of sleep motility of 12 students participating in the Civil Pilot Training program were obtained, nightly records for a six-month

period and representing 1156 "man-nights" of sleep being procured. An adequate sample of "normal" performance, *i.e.* prior to flight training, was obtained. All records were analyzed in a variety of ways. There was constructed a "motility index" which yields, in a single value, a measure of sleep motility. This value is found to vary in different subjects and on different nights between 0.021 and 0.247. Averages for different individuals range between 0.083 ± 0.003 and 0.179 ± 0.009 (S.E. of mean). Thus, on the average, the most motile sleeper in this group is about twice as active as the least motile sleeper. Little effect on sleep behavior of actual flight training was noted. Two subjects showed a statistically reliable increase of motility on nights following flights, and this is the general trend of results, though other subjects failed to show nonchance increases. One subject showed a reliable decrease. Other analyses of the records were made, particular attention being given to the matters of amplitude of sleep movements and the relation of amplitude to motility. Of special interest was the result of eliminating from consideration records for "short" nights (those of less than six hours of sleep). Variability was very greatly reduced by this operation.

Prereward and Postreward Performance in the "Latent Learning" of an Elevated Maze. S. RAINS WALLACE, JR., MORRIS G. BLACKWELL, JR., and IREDELL JENKINS, Tulane University.

Three groups of white rats were each given one unrewarded trial per day for 10 days on a 14 T-unit elevated maze. The animals in Group I were removed at the empty and odorless food box. Those in Group II were removed at chance points, but the same food box was at the end of the maze. Those in Group III were removed at chance points, but the food box was not present. Food was introduced in the eleventh day, and all animals were run under similar rewarded conditions for seven days. Group IV, run for 17 rewarded trials, served as a control.

The data are analyzed with respect to behavior before and after reward introduction. The findings are as follows: (1) In each of the experimental groups, performance immediately after the introduction of reward gives evidence of "latent learning." (2) In each of the groups, there is evident a tendency to avoid blind alleys before the reward is introduced. (3) Knowledge of the prereward performance of an animal provides no reliable basis for a prediction of its postreward performance.

Some theoretical implications are discussed and plans for future work described.

Analysis of Bernreuter's Inventory as a Predictor of Success in Certain Occupations: A Problem in Scientific Method. H. M. JOHNSON, Tulane University.

In a certain line of vocational training (the exact nature of which need not concern us) some 429 students were subjected to Bernreuter's Personality Inventory. Their answers to each question were classified as Yes, No, Doubtful, or Omitted. Later the students were classified according as they completed the course or failed it. The scores on the test were derived by Bernreuter's procedure and again by Glanagan's. None

of these sets of scores was significantly associated with success, except B4D, which yielded a T-coefficient of 0.18, but the trend was opposite to that which Bernreuter predicted. The 125 items were now tested individually: of them, 116 failed the standard $p=0.01$, while 9 attained or exceeded it. The actual distribution of the 125 values of Chi-squared from which these probabilities were derived did not agree with the theoretical distribution, which allowed not nine, but less than one significant item in the 125. But it seemed to be worth our while to ask not only what is the degree of association but also in what parts of the distribution it was found. The result led to a new interpretation of the results and emphasized the importance of the additional procedure which is quite often omitted.

The University of Tennessee Psychological Clinic. PAUL M. FITTS, University of Tennessee.

The University of Tennessee Psychological Clinic was established in 1938. It conducts an adjustment service for individual students enrolled in the University, a consultation service for various departments and faculty members, and research on problems of student guidance and personnel. Individual students are accepted for vocational and educational guidance, and for personality adjustment. Special services include a comprehensive vocational testing service, study and readjustment of failing students, and a study habit course. Research has centered about the exploration and development of student guidance techniques.

In addition to work with students the Clinic accepts a limited number of community cases. A child counseling program, carried on by a full-time field worker, has been undertaken in coöperation with the Child Personnel Division of the Knoxville schools. Next year several fellows will be attached to other agencies for part-time field training in applied psychology. The psychology department has helped in organizing the Knoxville Psychological Council, Inc. This Council represents all the public welfare agencies in the community and functions to coördinate existing psychological services and study the need for additional services.

Various aspects of the Clinic program will be described.

Section II

THELMA HUNT, Chairman

The Socioeconomic Status of the Homes of Mentally Superior and Retarded Children and the Occupational Rank of Their Parents. WILLIAM MCGEHEE, North Carolina State College, and W. D. LEWIS, Murray State Teachers College.

The emphasis on the positive aspects of the relation of children's intelligence to the socioeconomic status and occupational rank of parents has led to neglect of negative relations. An investigation of the socio-economic status and parental occupations of children involved in the Co-ordinate Studies in Education indicates that these negative relations are equally important. The 20,324 children in the present investigation, in Grades 4 through 8 in 455 schools, 310 communities, and 36 states in the

United States, are divided into superior, average, and retarded groups on the basis of IQ's derived from Kuhlmann-Anderson tests. Data on socio-economic status and occupational rank of parents were secured from teachers' reports. Analysis of the percentage of children in each of the specific groups found at specified occupational levels and socioeconomic ranks does reveal positive relationships with intelligence. Further analysis, however, indicates that superior, average, and retarded children are found in significant numbers at all occupational levels and socioeconomic ranks, the majority in each group coming from middle-class homes and middle-rank occupations. Investigators in the future should emphasize the negative as well as the positive relation of socioeconomic status and occupational rank to intelligence.

The Social Psychology of World War II. STEUART HENDERSON BRITT,
George Washington University.

The place of nationalism in the development of World War II is examined, and certain psychological processes used by Hitler in Germany are described. A comparison is then made between propaganda in a totalitarian and a democratic nation. Specific examples are given of war propaganda among civilians, neutrals and allied, and enemies. The use of the conditioned response in propaganda is discussed, especially in terms of emotional symbols.

Changes in American attitudes during the past 18 months are then analyzed, with reference to isolationism as compared with intervention. The effects of the invasion of Finland, propaganda from Germany and England, the fall of France, and other changes in the European scene are described in terms of their psychological effects on our program of defense.

A Psychological Study of Voice Recognition. FRANCES McGEEHEE, Alabama College.

An extension of a series of experiments designed to test the accuracy of voice recognition indicates that identification of unfamiliar voices becomes more and more unreliable as the interval between the first and second occurrence increases. In the original series reported in 1937, actual voices were employed; in the present series, recorded voices were used.

Evidence as to why some unfamiliar voices are more readily recognized than other unfamiliar voices is provided by oscillograms, made from the recorded voices, which furnish a tangible basis for precise voice analysis.

Results of the present study may be applied to legal procedure in court trials and particularly to investigations of sabotage in which a defendant's voice is an identifying factor.

The Relation Between Subjective Estimates of Quality of Certain Food Products and the Cost of Such Products. ROY M. DORCUS and JANE LEEDS, University of California at Los Angeles.

Many types of commodities are bought on a price basis, since price is presumably an index of quality. For certain food products, such as coffee,

butter, and wine, the only real criterion is taste. These three products, with varying prices, have been judged by a number of people under experimental conditions. In general, it may be said that price is not a true index of quality, since for certain of the products the cheaper priced article is preferred to the more expensive.

Relations Between Dominance and Noncompetitive Behavior in Female Chimpanzees. MEREDITH P. CRAWFORD, Vanderbilt University.

In animal studies social dominance is usually defined in terms of outcome of competition for some external goal such as food. In seeking an inclusive definition of "dominance status" it is important to discover whether dominant or subordinate animals, so defined, play distinctive roles in noncompetitive social interaction. We report certain aspects of an intensive study of six mature female chimpanzees. Daily observations were made over a period of four months, as the animals lived together, for a week at a time, in 15 different pairings. In addition to food-competition tests of dominance and other tests, we recorded check-list observations of normal cage behavior and behavior during the first 15 minutes after new pairings were made. Results for 90 "pair-hours" of observation indicate that the subordinate animal does most of the grooming, while no relation appeared between dominance-test results and sexual mounting and presentation, play behavior, and types of nonsocial behavior. The records of initial social interaction of newly formed pairs indicate that dominance, as measured by subsequent tests, may be predicted from: (1) priority of entrance into the other animal's cage, (2) attacking and bluffing, (3) being groomed first by the other animal, and (4) other less frequent types of behavior.

The Significance of Feral Man. WAYNE DENNIS, University of Virginia.

Supposed instances of feral man have been brought to attention from time to time, and these cases have frequently been cited as proofs of certain theories of human nature. In recent years references to wild children as scientific evidence have been made by anthropologists and sociologists, as well as by psychologists, and since no contrary argument has been presented in the last few decades, this evidence may soon find itself "accepted."

The assumption that this evidence is of scientific value is examined. Its weaknesses are indicated in detail, and the conclusion is reached that the documentary material is so poor that it seems best not to employ such material in discussions of the nature of human behavior.

Some Psychological Aspects of Yawning. JOE E. MOORE, George Peabody College.

The yawning reflex seems to have had little, if any, work done on it. The *Psychological Abstracts* for the last 12 years fail to reveal a single investigation on yawning. This study attempts to throw some light on the methods of eliciting the yawning reflex. Three methods of stimulating were used: first, graduate students instructed in how to "yawn" were sent to public meetings, such as chapel services and church congregations, and

directed to "yawn" at certain intervals, and responses of the people were checked by posted observers; second, auditory stimulation by means of phonograph recordings of simulated yawning; third, visual stimulation by means of photographs. Implications of the data are discussed.

PHILOSOPHY

CHRISTOPHER BROWNE GARNETT, Chairman

Functional Realism in Value Theory. W. PRESTON WARREN, Furman University.

The concept of value is in an undetermined state. Subjective views neglect the factor of propriety in valuations. Objective theories differ on the loci of pure value. Instrumentalisms shy away from sheer pragmatics in their view of values, yet fail to amplify on ends and agencies which means subserve. Functional realism is a fourth alternative. It would recognize the dynamic interactions of the value process, that value is, in fact, a counterpart of process, and that anything which functions in any sort of fashion is a value for the process within which it interacts and for the total set of processes which constitute the existential order. This is a less restricted and more objective view than any of the other three mentioned above. It takes account of every type of value in a total value process, recognizing diverse ends which are other than just instruments to other means. It broadens the whole view of values, so that human values are not isolated factors on a sea of totally nonvalue processes.

De Gustibus Non Est Disputandum. JOHN LADD, University of Virginia.

Certain theories of value, called "interest" or "approbation" theories, are frequently regarded as unsatisfactory because they ignore the 'fact' that values are 'objective.' There are many propositions about value that are hidden under this magic word "objectivity." What does the word mean, and what are the objections that seem so fatal?

After listing some of the many reasons for holding that values must be objective, we shall examine in more detail the particular difficulty which is summed up in the old adage—"de gustibus non est disputandum." We can dispute about values, but not about tastes, it is said. We can dispute about values because (1) I am justified, even obliged, to show others what has true value, (2) this is possible because a value is known or perceived as an identical object for different minds, and (3) knowledge or perception of values generally involves 'rational' knowledge which is a product of reasoning and is communicable. Tastes, likes and dislikes, have none of these. Our contention is that condition (1) is satisfied by the fact that interest increases when others are interested, condition (2) is probably meaningless, and what is known as "critical appreciation" will account for (3). Thus, despite its age-old popularity, this Latin proverb is found to be a fallacy.

Hippolyte Taine and the Background of Modern Aesthetics. IREDELL JENKINS, Tulane University.

Taine was perhaps the first critic to make a conscious and thorough attempt to construct an aesthetic theory based upon the empirical and materialistic metaphysics of the Nineteenth Century. Taine maintains that he gives aesthetic inquiry an altogether new direction by his introduction of the scientific method, and that he discloses for the first time the true nature of art and of the creative process. It is the purpose of this paper to examine these claims in the light of Taine's developed theory. The conclusion reached is that Taine does not succeed. Taine's doctrine of the nature of the work of art, and of the function and value of art in life, introduces no new ideas, but reiterates the doctrines of the idealistic schools. Further, in order to account for the essential character that he discovers in art, Taine is forced into contradiction with the metaphysical basis from which he started. The paper argues further that this contradiction between the facts of aesthetic experience and the demands of materialistic theory is inherent in all modern aesthetics, vitiating it at its base, and requiring to be resolved if artistic theory and criticism are to be put on a solid foundation.

Barbarism, Primitivism, Intellectualism, and Art. FRITZ MARTI, University of Maryland.

The word "barbarism" is here used to designate a situation in which man lacks the freedom of self-mastery, but is possessed by the unfathomable urges that well up in him and drive him to give vent to them in chaotic deeds or to suppress them by a semblance of self-discipline.

Intellectualism is an inverted barbarism, being an attempt to get away from the urgent pressure of one's unmastered nature and to seek refuge in rationalistic abstractions.

Neither barbarism nor intellectualism can bring forth art. The intellectualist may display virtuosity, and the barbarian the formalism of rituals.

Primitive art may appear in the midst of barbarous forms. In fact, it is probably the first manifestation of humanity and of that freedom which we find in intimately personal, yet essentially open and nonsecrective, articulation.

All art is primitive in the sense that it rests on our nature, is intuitive and nonintellectual, not a house divided against itself, but whole and substantial articulation. And all art is a matter of culture, springing from and imparting to us that free self-discipline without which humanity relapses into barbarism. The distinction between what is ordinarily called primitive art and cultured art is empirical and not a matter of principle.

The Perfectionism of Personalistic Ethics. EDWARD THOMAS RAMSDELL, Vanderbilt University.

To the question, "Does personalism imply a particular ethic?" the answer is, "Yes, perfectionism." Personalism is the philosophy that the

personal is the most real. Perfectionism is the view that the highest good is the fullest possible development of the functions of the self.

Personalism requires a perfectionist ethics because it views the self (1) dynamically as a developing entity, (2) pluralistically as a complex of interests, all integral to the growing self, (3) monistically as a teleologically unified whole of self-conscious experience, no aspect of which can legitimately be abstracted from the rest. The personalist ideal must therefore be dynamic; must prescribe the coherent organization of all experience, and precludes treatment of any aspect as of dominating normative significance. It can never be hedonistic, formalistic, or merely sociological or biological. Nor, because of its theory of value as objective, can it be relativistic. Personality is ultimate standard of value.

Writings of Bowne, Brightman (notwithstanding new approach), and Bertocci show consistent perfectionism, together with synoptic interest in conserving the essential truth of hedonism and formalism. Indeed, any adequate perfectionism must treat the Good Will not only as a potentiality to be realized but as a condition for any significant ethical formulation.

Platonic Pragmatism. HELMUT KUHN, University of North Carolina.

The pragmatic doctrine, according to which "truth is a kind of the good," is ultimately rooted in Platonic philosophy. To restore its full philosophical meaning we must disengage it from its modern naturalistic affiliations.

With this end in view the following antinomy will be faced. Thesis: The ultimate principles of philosophy, including the idea of the good, are discovered by a cognitive act. Hence, moral decision is, for the philosopher, an application of his knowledge. Antithesis: At the basis of our moral life there is a choice, the manifestation of our free will and, as such, irreducible to rational conclusion.

A reconciliation of the antithetical assertions is brought about by a concrete view of the philosophical process. Each step taken in the pursuit of philosophical truth is controlled by reason and conforms to the rules of logic. The process as a whole, however, necessarily issues in an attitude. It is the "conversion" of the mind to the good, the materialization of a moral choice. Knowledge and will, mutually determining each other throughout, are indissolubly united in their supreme effort.

Creative Experience in Science and Art. MAX SCHOEN, Carnegie Institute of Technology.

Experience is either perceptual or imaginative. The former is experience of content, the latter of form. Both science and art are concerned with form. Science seeks to understand form, from which there arise several characteristics of science as method and as knowledge. Art is the sphere of feeling for form, or abstract feeling. Science and art together present a complete picture of objective reality as something to be understood and as something to be felt.

JOINT SESSION

April 12

JOHN PAUL NAFE, Chairman

Philosophy and Psychology: Philosophy in the Southern Society, 1905-1941.
A. G. A. BALZ, University of Virginia.

The Southern Society is the symbol of a conviction, grounded in the history of inquiry, that special and vital relations exist between philosophic reflection and psychological science. Abstracting from special philosophic doctrines and from special psychological theories and hypotheses, the paper attempts to disclose these relations by an analysis of the matter-of-fact which forms the subject matter of psychology. A primary distinction is made between anthropocentric matter-of-fact (whose existence depends upon the nature and activity of man) and that which is not anthropocentric. The former is subdivided into several comprehensive classes. It is argued that the differences between the sciences are not so much due to divisions within total matter-of-fact as to differences in the funds of basic ideas in terms of which the matter-of-fact is construed. A science such as physics treats anthropocentric matter-of-fact as if it were not anthropocentric. It moves towards a maximal abstraction from the concrete richness of matter-of-fact, and so becomes all-inclusive by virtue of this abstraction. Psychology stands at the other extreme: it is irretrievably anthropocentric, and its proper matter-of-fact approximates maximal density and richness of internal constitution. For this reason, the task of psychology may be at once the most difficult and the most profoundly revealing science of existence. Psychology occupies a privileged position for philosophical thought in that it reveals the nature of existence in its maximal resourcefulness. Granted the character of psychology's matter-of-fact, its inquiries require an extraordinarily rich fund of ideas and hypotheses. It is therefore, beyond all other sciences, capable of profiting from philosophical criticism.

The Past 10 Years of Psychology in the Southern Society for Philosophy and Psychology. JAMES BURT MINER, University of Kentucky.

At the request of the Council of the Society the writer supplemented his paper at the twenty-fifth anniversary by bringing up to date and supplementing the tables then presented. These indicated the academic status, courses offered, titles of departments, and membership in national associations for both disciplines. For psychology during the last decade they included also the professional training of the members and classification of the papers presented. Besides noting changes within the Society itself, the growth and promise for the future were traced for psychology in the South. Attention was paid to some recent outstanding experimental contributions. Part of the paper was devoted to informal characterizations of southern psychologists and their systematic points of view. Because of the closer association with philosophy unusual interest was noted in the science of science.

The Meeting of Philosophy and Psychology. GEORGE BOAS, Johns Hopkins University.

If a problem be defined as the deviation from the rule, the question immediately arises of how a man recognizes such deviation. Such recognition is not spontaneous, since it does not always occur. The outstanding explanation is that of the pragmatists—recognition of a problem occurs when the action which normally eventuates from belief is blocked. But many ideas, especially in philosophy, have been persistently entertained regardless of the "success" of the action they might be expected to entail. The progress of ideas in the history of philosophy shows a number of apparently dissimilar causes of the reorientation of thought.

Not only does the recognition of problems become a question for psychologists, but so does the choice of premises in formal or pseudoformal reasoning. Given a set of highly abstract assertions, what determines the reasonableness of one set? By their very nature such assertions are not subject to the usual tests of verification, such as conformity to "fact," experimentation, etc.

These are only two of the points at which philosophy and psychology meet. Other points listed are: (1) What determines which of several conclusions will be drawn from a set of premises? (2) What is the explanation of what Professor A. O. Lovejoy has called "metaphysical pathos"? (3) On what does the choice of basic metaphors in philosophy depend?

Contemporary Arguments for Mind Energy. D. M. ALLAN, Hampden-Sydney College.

In the systems of Bergson and Montague, mind energy is an immediately experienced field of force which pervades the brain and releases or directs neural energy. Neural energy is an abstraction from our dynamic interaction with the energies of the environment. Visual realism cannot be accepted and kinesthetic realism denied. The brain is an extremely complex electrochemical machine, but there is no reason to believe that it can create, respond to universals, or bridge past and future. Montague adds to Bergson's dynamism his own original theory of consciousness as potential energy or energy within the cortex. Bergson's exaggerated contrast between mind and matter is mitigated by Montague's hypothesis of the intensive occupancy of space by consciousness. Reminiscent of Leibniz, the theory leads to and involves the difficulties of panpsychism. It also conflicts with certain neurological findings. Its highly speculative character renders the problem of verification an acute one. The basic argument is reasonable but requires a more rigorous causal analysis.

A Genetic Psychological Concept of Value. AXEL BRETT, University of Tennessee.

(1) When no organic mechanism exists which automatically produces results, the effort to satisfy existing needs, whether native or acquired, gives rise to the experience of a difficulty.

(2) The blocked situation foreshadows a goal which appears as more or less satisfactory, *i.e.* as degrees of good and bad.

(3) Only when the urge toward satisfaction involves a consciously experienced future end does it make sense to speak psychologically of desire and will. Will is simply a name for the experience of organic effort toward a goal. Consequently, we may improve motivation but not our will. Will can do no work.

(4) The difficulty foreshadows not only the goal but also the means. But since all instruments serve unequally, these, too, are experienced as varying degrees of good and bad, right and wrong. The terms good and bad should refer to the degree of satisfaction; the terms right and wrong, to judgment of choice.

(5) The experience of freedom arises not merely from ignorance of causes but perhaps primarily because our organisms are such that they can do many things with apparently equal ease. The term freedom should be given a connotation that fits the facts.

Conclusion: On the basis of the above analysis the concepts of good and evil can be given an adequate nonmetaphysical interpretation.

PROCEEDINGS OF THE SIXTEENTH ANNUAL MEETING OF THE MIDWESTERN PSYCHOLOGICAL ASSOCIATION

ROBERT H. SEASHORE, SECRETARY-TREASURER,
NORTHWESTERN UNIVERSITY

The Sixteenth Annual Meeting of the Midwestern Psychological Association was held at Ohio University, in Athens, on Friday and Saturday, April 11 and 12, 1941. The number of registered members and visitors was 358.

At the annual business meeting, held on Friday afternoon, 75 new members were elected, bringing the present membership to 555. The time of the Treasurer's report was changed to coincide with the first call for papers in December, in order to include a complete fiscal year, ending September 30. The Council announced the next place of meeting as Washington University (St. Louis, Missouri), Friday and Saturday, May 1 and 2, 1942.

The newly elected officers of the Association were announced as follows: President, 1941-1942: James P. Porter, Ohio University; Council Member, 1941-1944: Dael L. Wolfe, University of Chicago.

PROGRAM

SESSION A. MEASURES OF PERSONALITY

Friday, April 11, 9:00 A.M.

GEORGE A. KELLY, Chairman

The Unique Contributions of the Thematic Apperception Test to a Developmental Study. MARGARET SLUTZ, Antioch College.

A preliminary study to determine whether the Murray technique yields material not obtainable by other methods already in use. Matching techniques were used to check on agreement between analyzers; consistency of content; and extent to which the information gained was already familiar to staff members. Certain new material of probable significance was obtained from the pictures.

The Relationship of Bernreuter Personality Scores to Other Parent Characteristics, Including Parent-Child Behavior. C. H. PETERSON, Antioch College.

The Bernreuter Personality scores of parents are related (a) to other

general characteristics of the individuals—age, education, intelligence, etc.; and (b) to ratings on the Fels Parent Behavior Scales. Correlations ranged from .00 to $\pm .50$ and present a consistent pattern.

The Nash-Hunsicker Personality Scale. A. L. HUNSICKER, University of Chicago.

This scale, standardized in collaboration with Bert A. Nash, is designed to measure attitudes as determinants of behavior patterns. Weighted keys are prepared between every combination of manic depression, process schizophrenia, schizophreniform, and epilepsy psychosis, selected by Dr. Phyllis Wittman on her Prognostic Scale, and a normal adult population.

The Rorschach Test in Relation to Perceptual Organization and to Intelligence. WALTER A. VARVEL, University of Chicago.

Rorschach records from 138 university students were analyzed. The paper discusses: (1) norms, (2) intercorrelations of the Rorschach categories, and (3) correlations between these categories and intelligence scores (A.C.E.). Beck's score for perceptual organization (closure) is treated in more detail. Reference is made to a study now under way in conjunction with Dr. L. L. Thurstone's survey of visual Gestalt effects.

Personality Changes in 35 Girls in Various Stages of Pubescent Development Based on the Rorschach Method. MARGUERITE R. HERTZ, Western Reserve University.

Personality changes observed in Rorschach studies of 35 girls, tested at 12 and 15 years, are analyzed according to the pubescent status of these girls. Changes noted must be attributed both to age and to effect of pubescent development. Constriction is viewed as a prepubertal pattern; dilation, a postpubertal one; the introversial swing, an index of maturity.

Personality Changes in Adolescence as Revealed by the Rorschach Method. ELIZABETH BAKER, Western Reserve University.

An analysis of the Rorschach records of 76 children tested at the Brush Foundation reveals that children show a decrease in the constriction of their emotional reactions from 12 to 15 years, with an accompanying improvement in the quality of their mental control. Significant sex differences are also obtained.

The Construction and Validation of a Group Home-Environment Scale. W. A. KERR and H. H. REMMERS, Purdue University.

With 47 major items measuring such aspects of the home as those related to aesthetic, cultural, economic, and community prestige background, this group scale has reliability coefficients of .84 and .86 and a validity coefficient of .85. Administration group was 1304 high school seniors.

SESSION B. ANIMAL BEHAVIOR

Friday, April 11, 9:00 A.M.

JOHN F. SHEPARD, Chairman

The Effect of Certain Pretraining Procedures Upon Maze Learning. J. M. PORTER, JR., Carnegie Institute of Technology, and HARRY W. KARN, University of Pittsburgh.

The effect upon subsequent maze learning of certain pretraining procedures designed to establish (1) familiarity with the maze and a goal orientation, (2) familiarity with the maze, and (3) habituation to handling, which are factors possibly responsible for the phenomenon of 'latent' learning, is analyzed.

Maze Complexity in Alleged Regressive Behavior. E. H. PORTER, JR., Ohio State University, and W. C. BIEL, Miami University.

Rats trained on one pathway in a two-unit maze having common paths at choice points deviated from that pathway following shock as often as rats given training on both pathways. Either potency of earlier learning is questioned or the validity of regression measured in the simple two-choice maze.

Measuring Individual Differences in Aggressiveness in Rats. CALVIN S. HALL, Western Reserve University.

Methods of studying individual differences in aggressiveness are described. A rating scale for quantifying the degree of aggressiveness has been developed. The consistency of aggressiveness in a variety of situations and the relationship of aggressiveness to other measured characteristics are presented.

Discrimination Learning and Reversal of Discrimination Learning in Monkeys. H. F. HARLOW, University of Wisconsin.

Seven monkeys were trained to form and to reverse a series of discriminations between pairs of three-dimensional objects. Learning to discriminate and to reverse discrimination frequency appeared in a single trial. The subjects seldom made five or more errors before solving the problem.

An Investigation of the Problem of Latent Learning in the White Rat. CARL E. DEISENROTH and KENNETH W. SPENCE, University of Iowa.

A single choice-point maze involving three pathways, one leading to food, one to water, and one to an empty goal box, was used to study latent learning. After being trained to use the central alley for water

under thirst, the subjects under hunger tended to respond appropriately to the food alley.

The Problem of Predelay Reinforcement in 'Delayed Response.' JOHN T. COWLES, University of Illinois.

Sixty rats were each given about 250 spatial delayed response tests. Thirty never received food and 30 regularly received food on each predelay run. All received food on each postdelay retention test. Hypotheses explaining the superior scores of the predelay unfed group and implications for other types of learning are suggested.

Metrazol-induced Convulsions in Normal and Neurotic Strains of Rats. NORMAN R. F. MAIER and JACOB SACKS, University of Michigan.

Metrazol-induced convulsions were studied in two groups of rats which differed in heredity, convulsive experience, and susceptibility for abnormal reactions to certain auditory stimuli. The pattern and threshold of the reaction was found to be distinctly different in the two groups.

The Production, Persistence, and Transmission of Convulsions and Related Behavior in the White Rat. WILLIAM J. GRIFFITHS, University of Cincinnati.

The study is an attempt to determine whether this particular behavior pattern is a specific response to a particular stimulus situation or whether it is of a more fundamental nature, persisting outside of the stimulus situation and affecting the general behavior of the animal more or less permanently. Four generations were studied over a two-year period.

Friday, April 11, 9:30 A.M.

1. SYMPOSIUM: FREUDIAN MECHANISMS
AND FRUSTRATION

KURT LEWIN, Chairman

The Experiments on Frustration and the Psychoanalytic Theory. RALPH STOGDILL, State Bureau of Juvenile Research, Columbus, Ohio.

The Freudian Approach and That of Conditioned Reflex. JOHN FINAN, Oberlin College.

Frustration Mechanisms and Field Theory. ERIK WRIGHT, Ohio State University.

Need We Assume Freudian Mechanisms of Frustration Therapy? MILTON B. JENSEN, Louisville, Kentucky.

Reply From a Psychoanalytical Point of View. THOMAS M. FRENCH, Psychoanalytic Institute, Chicago, Illinois.

Defense Mechanisms and Personality Structure as "Experimental Problems." DONALD MACKINNON, Bryn Mawr College.

2. SYMPOSIUM: REPORTS FROM THE LABORATORIES

ARTHUR G. BILLS, Chairman

Studies in Dominative and Socially Integrative Behavior. HAROLD ANDERSON, University of Illinois.*Localization in the Auditory Tracts.* ELMER A. CULLER, University of Rochester.*Infant Behavior During the First 10 Days of Life.* FLOYD C. DOCKERAY, Ohio State University.*Further Explorations in the Psychophysiological Factors in Experimentally Induced Frustrations.* G. L. FREEMAN, Northwestern University.
Discrimination Learning. H. O. GULLICKSEN and DAEL WOLFLE, University of Chicago.*Studies With the Northern Blackfeet Indians.* L. M. HANKS, JR., University of Illinois.*Metricizing Psychological Dimensions.* DON LEWIS, University of Iowa.*Researches in Taste Thresholds.* SAMUEL RENSHAW, Ohio State University.*The Program of Research at Kansas.* R. H. WHEELER, University of Kansas.

3. SYMPOSIUM: CONTEMPORARY SOCIAL PROBLEMS: MORALE

(Sponsored by S.P.S.S.I.)

A. R. GILLILAND, Chairman

The Work of the National Research Council, Division of Morale. DAEL WOLFLE, University of Chicago; discussion led by H. B. ENGLISH, Ohio State University.*Some Illusions in Judging the Morale of the "Other."* G. ICHEISER, Chicago, Illinois.*The Morale of the Employer in the Present Emergency.* C. A. RUCKMICK, C. H. Stoelting Co., Chicago, Illinois.*The Morale of the Employee.* A. A. CAMPBELL, Northwestern University.*Changes in Attitudes Toward Participation in the Present Emergency.* E. T. KATZOFF and A. R. GILLILAND, Northwestern University; read by ALLEN L. EDWARDS, University of Akron.

LUNCHEONS

Friday Noon, April 11

Psi Chi, followed by address of retiring President, Midwestern Division, on *International vs. Civil Wars in Relation to World Climatic Fluctuations Since 600 B.C.* R. H. WHEELER, University of Kansas.

Nations rise on shifts from cold to warm periods, fall on shifts from warm to cold. Absolutism, socialism, and communism are warm phase developments; democracy, cold. International wars are warm and civil wars cold. Both types of war cluster during climatic transitions. All these events are apparently functions of human energy levels conditioned in part by climate.

Rorschach Luncheon.

SESSION A. CONDITIONING

Friday, April 11, 1:30 P.M.

ELMER A. CULLER, Chairman

The Effect of Nembutal Upon the Conditioning Process. W. N. KELLOGG and CHARLES RAY HEADLEE, Indiana University.

Flexion conditioning curves obtained from dogs which were heavily drugged were of the sigmoid form characteristic of "normal" conditioning. The efficiency of learning was considerably lower under nembutal. Probable causes of this lowered efficiency are (a) reduction in sensitivity, (b) the effect of the drug upon the nervous system.

Nonalimentary Components of Food-Reinforcement of Conditioned Fore-limb-Flexion in Food-satiated Dogs. W. J. BROGDEN, University of Wisconsin.

Food-satiated animals maintain a high frequency of conditioned flexion if each conditioned response is followed by food, even though it is not eaten. The conditioned response of food-satiated animals will be rapidly extinguished if food does not follow each conditioned response. Food, for the satiated animal, has a nonalimentary reinforcing effect.

Measures of Strength of Conditioned Eyelid Responses. LLOYD G. HUMPHREYS, Northwestern University.

Measures of strength of conditioned eyelid responses are analyzed with respect to their reliabilities, interrelations, and correlations with measures of reflex sensitivity. Data are drawn from several sources and combined to give more reliable results. The measures studied have high reliabilities and can be described by "physiological" and "attitudinal" factors.

SESSION B. SOCIAL PSYCHOLOGY

Friday, April 11, 1:30 P.M.

J. R. KANTOR, Chairman

A Skeptical Note on the Use of Attitude Scales Toward War. STANFORD C. ERICKSEN, University of Arkansas.

The results of an attitude scale toward war (Peterson) given in June, 1940, indicate that the distribution of scores is skewed or bimodal; the gross score is insensitive to individual variations in current war attitudes; the presence of stereotyped statements lowers the validity; 1930 norms are inadequate for 1940-1941 scale results.

A Survey of the Social Opinions of Three Generations. I. J. MONTGOMERY, University of Nebraska.

This study, based upon the expressed opinions of over 1100 high school seniors and their parents, located in 16 communities in 7 states, sought

to secure information on the following problems: (1) Has there been a shift during the past generation in opinions on current social questions? (2) Do parents and children know each other's opinions on these social questions?

Reactions of College Students to an Unlabeled Fascist Attitude Scale. ALLEN L. EDWARDS, University of Akron.

This study reports the construction of a disguised attitude toward Fascism. The reliability of the scale before item analysis was .93 (26 items). The reliability of the revised scale for a new group of subjects was found to be .84 (22 items). Significant factors related to scores on the test made by Ohio State and University of Akron students include: college status, political party affiliation, age, and sex.

A Study of Parent-Child Relationships in Attitudes. GRACE HIRSCHBERG and A. R. GILLILAND, Northwestern University.

The role of the family in formation of attitudes was measured by giving three Thurstone-type attitude scales to students and their parents. The amount of correlation (indicating parents' contributions to children's attitudes) indicated a variable role dependent upon type of home and attitude studied.

An Experimental Study of the Effects of Conflicting Authority Upon Child Behavior. CHARLES E. MEYERS, University of Iowa.

Preschool children subjected to conflicting commands in a play situation showed a 50% drop in rating of maturity of play, while concurring commands caused a 25% drop. Positive ("do") and specific commands resulted in less emotionality and escape behavior than negative ("don't") and vaguely worded commands.

The Influence of Frustration Upon the Social Relationships of Young Children. M. ERIK WRIGHT, Ohio State University.

Thirty-nine pairs of children (3 to 6 years of age) were used. Under frustration, significant decreases in the amount of interchild conflict obtained. Friendly type of interaction, co-operation, group cohesion, and emotionality increased significantly. Attitude of children towards experimenter shifted from friendliness to hostility. Strong friends tended to show less frustration behavior than did weak friends.

Some Social and Emotional Factors Relating to the "Cutting" of Collegiate Requirements. J. E. JANNEY, Western Reserve University.

One hundred and seventy-two undergraduate women were observed in eight types of social activity over a period of one academic year. Frequent "cutters" were contrasted with infrequent "cutters." Local campus culture patterns as regards types of "cutting" plus individual emotional instability appear to be differential. Neither frequency of social participation nor academic standing appear to be differential.

The Measurement of the Behavior of Second-Grade Children in Relation to the Teachers' Dominative and Socially Integrative Contacts. JOSEPH E. BREWER, University of Illinois.

A reliable technique was developed for observing the behavior of children in the schoolroom, simultaneously with the recording of the teachers' dominative and integrative contacts. Significant differences were found in the behavior of children in two second-grade rooms whose teachers showed significant differences in their dominative and integrative behavior.

SESSION C. PSYCHOLOGICAL TESTS

Friday, April 11, 1:30 P.M.

J. P. PORTER, Chairman

An Evaluation of Intelligence Tests Used in Industrial Schools and Reformatories. LEONA MAE FAILOR, University of Nebraska.

Very few correctional institutions have attempted to determine experimentally the worth of mental tests used by them. This report shows that of various tests employed in a girls' training school, the Haggerty and the National tests give best results at the "elementary" level and the Hennom-Nelson at the "advanced" level.

The Place of the Bernreuter Personality, Stenquist Mechanical Aptitude, and Thurstone Vocational Interest Tests in College Entrance Tests. HOMER B. REED, Fort Hays Kansas State College.

Results obtained from 259 college freshmen and 266 high school students show that these tests have little relation to each other or to tests of scholastic achievement. Neither the Bernreuter nor the Thurstone test scores appear to provide a sufficient basis for educational or vocational guidance. The Stenquist test is useful for discovering mechanical ability.

Motor and Mechanical Abilities in Professional Schools. CLAUDE EDWARD THOMPSON, Northwestern University.

Ten tests administered to 755 general college students, 35 freshmen and 40 seniors in dentistry, and 50 Fine Arts students indicate semi-specificity of motor and mechanical skills, dependency of success on skills specific to curricula, and significant differences, accentuated by curricula, between students in professional schools and general college students.

Differences Among Examiners Using Stanford-Binet Tests With Subjects of Various Levels of Age and Intelligence. D. A. WORCESTER, University of Nebraska.

There seems to be a slight tendency for women examiners to get higher scores from female subjects on original testing than do male subjects tested by women or subjects of either sex tested by men. On retests, girls examined by women make slightly less gain than boys examined by women or than either girls or boys examined by men.

A Nonverbal Test of Learning Aptitude for Young Deaf Children. MARSHALL S. HISKEY, University of Nebraska.

A test containing 11 types of items and 120 individual parts has been constructed for deaf children from 3 to 10 years of age. Items were selected after an extended observation of the activities of deaf children. The standardizing group consisted of 466 deaf children from seven state schools.

Friday, April 11, 2:00 P.M.

1. SYMPOSIUM: THE RELATION OF EXPERIMENTAL
PSYCHOLOGY TO CLINICAL PROBLEMS

NORMAN CAMERON, Chairman

Contributors:

CARLYLE JACOBSEN, Washington University, St. Louis, Missouri.

NORMAN R. F. MAIER, University of Michigan.

HARRIET E. O'SHEA, Purdue University.

WARD C. HALSTEAD, University of Chicago.

2. SYMPOSIUM: CONDITIONING, 2:30 P.M.

HARRY HARLOW, Chairman

Specificity vs. Nonspecificity of Conditioned Responses. W. N. KELLOGG,
Indiana University.

Motivation and Conditioning. W. J. BROGDEN, University of Wisconsin.

Set and Conditioning. E. R. HILGARD, Stanford University.

Conditioning and Complex Problems of Behavior. CLARK L. HULL, Yale
University.

DEPARTMENTAL TEA, 4:00 to 5:30 P.M.

ANNUAL BUSINESS MEETING, 4:15 P.M.

ANNUAL DINNER (Informal), 6:00 P.M.

E. S. CONKLIN, Toastmaster

Address of Welcome: DEAN T. C. McCracken, Provost, University of
Ohio.

Presidential Address: E. A. CULLER, University of Rochester.

Subject: "On the Mechanism of the Acoustic Analyzer"

SESSION A. PHYSIOLOGICAL PSYCHOLOGY

Saturday, April 12, 9:00 A.M.

R. C. DAVIS, Chairman

A Disturbance in the Perception of Apparent Motion in Brain-injured Children. HEINZ WERNER, Wayne County Training School, and BURTON D. THUMA, University of Michigan.

Two groups of mentally deficient children of comparable age and IQ, one group of which showed symptoms of brain injury, were examined for

ability to perceive apparent motion. It was found that the brain-injured group differed from the control group in that they failed to experience apparent motion with abstract line figures.

The Cerebral Representation of "Macular" Vision in Man. WARD C. HALSTEAD, A. EARL WALKER, and PAUL C. BUCY, University of Chicago.

In two cases of occipital lobectomy presenting unusual opportunities for detailed investigation of the cortical projection of the macula (including histological analysis of the lesion) one was found to have sparing of central vision for form, color, and brightness; the other had no sparing of central vision. The paradox presented by these two cases does not seem open to solution in terms of any of the present hypotheses concerning the arrangements of the visual system in man.

Some Electroencephalographic Correlates of Intelligence in Eight-Year-Old Children. JOHN R. KNOTT, University of Iowa.

Midoccipital electroencephalograms were recorded in a population of 48 eight-year-old children who ranged in IQ from 171 to 30. When Alpha frequency and IQ were correlated, $r = .50$, which is significant at the 1% level of confidence. Alpha index and IQ were uncorrelated.

Performance Scores in Cases of Cerebral Dysrhythmia. M. L. PHILLIPS, C. W. DARROW, S. I. STEIN, and N. BERKOVITZ, Institute for Juvenile Research, Chicago, Illinois.

Children referred for electroencephalograms have been tested routinely on the Revised Stanford-Binet, Form L, and the Grace Arthur Performance Scale, and on special visiomotor tests. Behavior problem children characterized by diffuse cortical dysrhythmia give performance scores on visiomotor tests below the norms for their mental age.

Longitudinal Measurements of Autonomic Balance in Children. M. A. WENGER, Antioch College.

The "autonomic factor" from a previously reported analysis has been estimated for each of the 62 children involved. Four of these quantitative measures of autonomic N.S. function, covering a period of one and a half years, are available for most cases. Individual differences on this "autonomic scale" are continuously distributed and tend to be consistent.

By What Criteria Can Emotion Be Defined? PAUL THOMAS YOUNG, University of Illinois.

The pattern-response definition of emotion is useful in the laboratory despite the absence of a criterion for distinguishing between emotional and nonemotional patterns. Emotion is defined as (a) a disturbed physiological state, (b) which contains marked bodily changes in the smooth muscles and glands, and (c) which originates in the environment.

Refractory Phase and Mental Set as Co-determinants of Efficiency and Fatigue. JAMES VAUGHN and ERHART JOHN STROBEL, University of Cincinnati.

The effects on efficiency and fatigue of four time intervals (.0 second, .5 second, 1.0 second, and 1.5 seconds) between response and subsequent stimulation were studied. The longer time intervals were most effective in reducing errors and blocks, while the interval of .5 second was found to be optimal for reaction time. Fatigue by all criteria was found to be dependent upon continuous work.

The Relation of Output and Energy Expenditure to Patterns of Residual Tension Induced by Previous Work. L. HAROLD SHARP, University of Illinois.

Evidence is provided apparently showing that the greater efficiency in the second of optimally spaced double work periods is primarily dependent upon the degree of residual tension in the primary muscle group rather than heightened total or widespread tension (general "warmed up" condition) at the time of task resumption.

An Action Potential Study of Bilateral Transfer. ROBERT S. DANIEL, Indiana University.

Using an action potential technique, the role of tension during bilateral transfer was examined. Attention was given to the level of tension in the left (nonpracticing) member during right practice trials. Three experimentally controlled levels of tension in the left hand showed relationships to the amount of transfer.

SESSION B. CLINICAL PSYCHOLOGY

Saturday, April 12, 9:00 A.M.

SIDNEY L. PRESSEY, Chairman

Use of Comic-Strip Characters in Diagnosis and Therapy. ERNEST A. HAGGARD and HELEN SARGENT, Northwestern University.

The child, acting as "author" of his favorite comic strip, creates a story in which the hero does whatever he wishes. Complete freedom to remodel characters or situations is permitted, so that various conflict situations may be depicted. Thus, the child often describes (through the comic-strip characters) his own difficulties.

The Relative Accuracy of Clinical and Statistical Predictions of Academic Achievement. THEODORE R. SARBIN, University of Minnesota.

Predictions of academic achievement (average grades) were made by five clinicians from aptitude, achievement, personality, and interest measures, from data furnished by the students on individual record forms, and from interviews. Predictions were also made from a regression

equation in which two measures predicted the criterion. The clinical predictions were found to be more accurate than the statistical predictions. The results are discussed in terms of the logic of prediction.

An Analysis of Scatter in a Test Battery Used in Clinical Diagnosis.

J. F. BROWN, University of Kansas, DAVID RAPAPORT and CARL GUSTAF TILLMAN, Menninger Clinic, and S. SANFORD DUBIN, Southard School.

A test battery made up of Rorschach, Szondi, Bellevue, Hanfmann-Kasanin, Babcock, B. R. L. Sorting, and Thematic Apperception is regularly given all newly admitted patients. For particular analysis we have chosen scatter of scores obtained from 100 psychiatric patients on the Bellevue Adult Scale. These may be represented on scattergrams which have certain diagnostic significance.

The Nature of Mental Deterioration in Certain Psychoses. A. R. GILLILAND, Northwestern University.

Five psychotic groups were tested with the Bellevue scale and compared with a control group. Less intertest variation was found, except for the paretics, than for the controls. This indicates that, except possibly for paretics, deterioration in the functions tested is general rather than specific.

Effect of "Shock" Stimuli on Skin Resistance and Overt Movements of Psychotics. JULIAN H. PATHMAN and G. L. FREEMAN, Northwestern University.

Twenty-six male psychotics were subjected to two types of displacing stimulation (pistol shot and personal questions). Records of palmar skin resistance and movements of the cot on which *S* lay were obtained before, during, and after each test. Results are analyzed both with reference to symptom classification and 'class' differences as revealed in the experimental measures.

Physiological and Motor Responses to a Regularly Recurring Sound. GEORGE D. LOVELL, Northwestern University.

Physiological and motor responses to a recurring tone of 60 cycles indicated relaxation (rise in palmar skin resistance above basal), tendency of breathing rate to approach that of the tone, and presence of motor rhythms simultaneous with the tone rate. These objective results were checked by a control group and questionnaire.

A Comprehensive Plan for Case Summaries. JOHN K. HEMPHILL and GEORGE A. KELLY, Fort Hays Kansas State College.

Sixty-three clinically significant variants were isolated in a review of case records in the file of the Fort Hays Kansas State College Psychological Clinic. Now all new case records are made to touch specifically on each of these variants. This plan provides for restructuralization of otherwise fragmented case records.

SESSION C. PSYCHOMETRICS

Saturday, April 12, 9:30 A.M.

HAROLD GULLIKSEN, Chairman

Determining the Intrinsic Difficulty of a Tenor Song. HERMANN F. BUEGEL and VINCENT J. DODGE, University of North Dakota.

The intrinsic factors of difficulty in a tenor song are melodic range, phrasing, sustained notes, interpretation, tone flow, and accompaniment. With the aid of two especially constructed work sheets, by the aid of which these factors and variations within them are quantifiable, relative indices of difficulty of tenor songs can be obtained and the opinionated error of personal judgments avoided.

A Method for Describing Sociometric Data in Terms of Deviation From Chance Expectancy. URIE BRONFENBRENNER, University of Michigan.

The paper presents a technique for describing sociometric relationships in terms of the deviation from chance expectancy induced by the psychological forces operative in a social field. The method is applied to a longitudinal study of a third-grade social structure. Variation in status is correlated with clinical data from behavior journals and growth records.

The Role of Test Standardization in IQ Constancy. MAURICE LORR, U. S. Civil Service Commission, and RALPH K. MEISTER, Mooseheart Laboratory for Child Research.

The necessary conditions for standardization insuring constancy of IQ in Binet-type scales under the assumption of a linear growth function are presented together with the methods for satisfying such conditions. It is shown that these methods tend to reduce test reliability and validity.

Voting Groups Among Leading Congressmen Obtained by Means of the Inverted Factor Technique. HILDING B. CARLSON and WILLARD HARRELL, University of Illinois.

Seventeen leading congressmen in each house of Congress were treated as variables and their votes cast during the year 1939 treated as the population. Factoring by the centroid method the tetrachoric correlations between each congressman and graphic rotations gives five orthogonal factors for the representatives and six for the senators.

A Factor Analysis of Verbal Ability. DONALD M. JOHNSON and FLOYD REYNOLDS, Fort Hays Kansas State College.

Problem-solving experiments have emphasized two fundamental processes: (F) flow of responses and (S) selection of these responses according to the requirements of the problem. Centroid analysis of 10 verbal tests strengthens the hypothesis that individual differences in these two processes are important determiners of test scores.

Saturday, April 12, 10:00 A.M.

1. SYMPOSIUM: THE FIRST COURSE IN PSYCHOLOGY

F. C. DOCKERAY, Chairman

An informal round table in which all were invited to participate. Suggested topics for discussion were: (1) the objectives of the first course, (2) coöperative effort on conferences, (3) demands for functional emphasis, (4) merits of large and small sections, (5) recommendations for minimum credits.

2. SYMPOSIUM: RESEARCH I'D LIKE TO DO
IN CHILD DEVELOPMENT

M. A. WENGER, Chairman

Contributors:

HORACE B. ENGLISH, ERNEST R. HILGARD, FRANCIS T. PERKINS,
Division on Child Development and Teacher Personnel, Comm.
on Teacher Educ., A.C.E., University of Chicago.

T. W. RICHARDS and M. A. WENGER, Samuel S. Fels Research Institute,
Antioch College.

3. SYMPOSIUM: BUSINESS AND INDUSTRIAL PSYCHOLOGY

JOSEPH TIFFIN, Chairman

What the Advertising Profession Would Like From Psychology. MELVIN S.
HATTWICK, Needham, Louis, & Brorby, Chicago, Illinois.

What Producing Industries Would Like From Psychology. S. E. SEASHORE,
Carnegie-Illinois Steel Corporation, Gary, Indiana.

What the Optical Industry Would Like From Psychology. S. E. WIRT,
Purdue University.

IOWA ALUMNI LUNCHEON

12:00 NOON

SESSION A. EXPERIMENTAL STUDIES OF PERSONALITY

Saturday, April 12, 1:30 P.M.

W. B. PILLSBURY, Chairman

*The Effect Upon Judgments of Personality Traits of Varying a Single Factor
in a Photograph.* G. R. THORNTON, Purdue University.

Varying one factor at a time in actual photographs indicated: (1) significant changes in ratings result; (2) effect varies with different subjects; (3) a person when smiling is rated higher in sense of humor, kindness, honesty; (4) a person wearing glasses is rated higher in dependability, industriousness, intelligence, and honesty.

Phantasy and Vocational Choice. WILLIAM CLARK TROW, University of Michigan.

Three hundred and thirty high school pupils discriminated probable, possible (with training), and phantasy choices of occupations, revealing

the suggestion value of vocational interest questionnaires. They showed considerable satisfaction with their vocational outlook. The 40% of choices in the "professional" category were viewed as not out of line with the skewed distribution of intelligence of the group.

The Significance of the Various Forms of Expression for the Judgment of Personality. C. WILLIAM HUNTELY, Western Reserve University.

Various forms of expression, including the voice, the handwriting, pictures of the hands and of the profile, and the style of retelling a story were submitted to 81 individuals for judgment. The results indicate that each form of expressive behavior reveals somewhat different aspects of the person being judged.

An Experimentally Created Conflict Expressed in a Projective Technique. BEATRICE A. WRIGHT, University of Iowa.

Conflict produced in children placed in a situation requiring a generous or selfish toy selection was revealed in a projective story-telling technique. A significant correlation was found between the intensity of the conflict and the degree to which themes of destruction, punishment, and self-justification were elaborated.

Comparative Study of the Spontaneous Play Activities of Normal and Mentally Defective Children. BETTY M. HORNE and CHARLOTTE C. PHILLEO, Wayne County Training School.

Seventy-five mentally defective and normal children of mental ages six through eight were observed for 30 minutes in an individual play situation. The normal children showed a greater preference for constructive play materials and spent a greater proportion of time on constructive activity than did the mental defectives.

Relations Between Sociable Behavior as Time-sampled in Nursery School and Rated Behavior Traits. M. POWELL, Antioch College.

This paper presents some relationships between sociable behavior as measured by a time-sampling technique in a nursery school and various aspects of personality which were rated on the basis of observation in the same situation during the same period. The results indicate the validity of both techniques of measurement.

Parent Behavior as Related to Child Development: Profile Analysis. MARY FRANCES HARTSON, Antioch College.

Eighty Fels children were rated on 30 variables of the Child Behavior Scales. Their parental environments were rated on 30 variables of the Parent Behavior Scales. For each child variable the parent profiles for extreme children were superimposed, showing what parental patterns are associated with extremes of child personality.

SESSION B. HUMAN LEARNING

Saturday, April 12, 1:30 P.M.

ERNEST R. HILGARD, Chairman

Proactive Inhibition as a Function of the Time Interval Since Learning the First Set of Material. WILBERT S. RAY, Hillsdale College.

Proactive inhibition is said to be greatest with moderate learning of the original material. It might vary with the amount of forgetting. If forgetting increases with time, the proaction should be greatest after some interval. Groups of subjects learned a second list after intervals of 0, 1, 2, 7, and 14 days. Proactive inhibition was greatest at the 2-day interval.

List Structure (Organization) as a Determiner of Amount of Retroactive Inhibition. CLAUDE E. BUXTON, Northwestern University.

"Crowded" items are inhibited more than "isolated" with the reproduction method. Crowding-isolation is insignificant with the anticipation method. With either method isolated items are learned more readily. The interpretation of results is based on possibilities for existence of figure-ground relationships in the original list under the two methods.

The Effect of Rest Pauses on the Acquisition of the Pursuitmeter Habit. ARTHUR W. MELTON, University of Missouri.

Pursuitmeter learning was studied with massed practice and with a single rest of 20 minutes, 2 days, or 2 weeks early during learning. The 20-minute rest gave the greatest initial reminiscence, but the 2-day rest gave the best final performance.

The Nature and Efficacy of Methods of Attack on Different Reasoning Problems. BENJAMIN BURACK, Schurz Jr. College and Maine Township Jr. College.

Various problems were given individually to students; work-methods and introspections were recorded. Efficacy with respect to successful solution varied from none to considerable, for different methods of attack, depending on the problem. The value of certain methods seems determined by the *kind of problem*.

Progress in the Acquisition of a Complex Act of Skill. GERALD HODGSON and JAMES VAUGHN, University of Cincinnati.

The bowling records for a period of 10 years of the University of Cincinnati Bowling League were analyzed to ascertain characteristics of the curve of learning and the effects of vacations. The group curve displayed negative acceleration and plateaus; individual curves varied widely. Vacations had different effects on different individuals and on the same individual from year to year.

SESSION C. INDUSTRIAL PSYCHOLOGY

Saturday, April 12, 1:30 P.M.

ARTHUR W. KORNHAUSER, Chairman

Applied Psychology at the Crossroads. CHRISTIAN A. RUCKMICK, C. H. Stoelting Co., Chicago, Illinois.

A noticeable change has recently occurred in the adoption of psychological testing materials and techniques in the industrial field. Top management now generally recognizes the need for psychological service because of benefits derived from financial savings and from favorable industrial relations within the organization.

A Study of Tests Predictive of Success in the Occupation of Job Setter. ORLO L. CRISSEY, Flint Guidance Center.

Twenty-nine job setters in the automotive industry were given 10 tests consisting of 25 predictors. The criterion of success was established by the ratings of supervisors. By the Wherry-Doolittle technique five tests were identified whose combined scores gave a multiple correlation of .66 with the criterion.

The Influence of Training on Mechanical Aptitude Test Scores. RICHARD W. FAUBION and EARLE CLEVELAND, Air Corps Technical Schools, and WILLARD HARRELL, University of Illinois.

One hundred men who had recently received six weeks training in mechanics courses did not score significantly higher on two mechanical aptitude tests, mechanical movements and surface development, than 100 recruits without mechanical work experience. The two groups were equated on mental alertness test scores.

Aptitude Tests for Army Weather-Observer Students. EARLE CLEVELAND and RICHARD W. FAUBION, Air Corps Technical Schools, and WILLARD HARRELL, University of Illinois.

A battery of 10 aptitude and proficiency tests was administered to 116 Weather-Observer students at the Air Corps Technical Schools. Tests of mental alertness, physical proficiency, algebra proficiency, and meteorology proficiency gave a multiple correlation of .632 with meteorology examination grades.

A Factor Analysis of an Industrial Merit Rating Scale. EDWIN EWART, S. E. SEASHORE, and JOSEPH TIFFIN, Purdue University.

A factor analysis of a 12-“trait” merit rating scale indicated that only two fundamental “traits” or factors influenced the rating on all 12 items. Factor I, termed “ability to do the present job,” accounted for most of the variance of the scale considered as a whole. Factor II, less significant statistically, seemed to represent knowledge or skill possessed over and above that required for the specific job.

A New Method for Scoring the Wiggly Block. WILLIAM JAMES GIESE,
Northwestern University.

An aid in test battery results, since the distribution is normal, is provided by scoring the Wiggly Block with the formula:

$$\text{Score} = 100 \left(\frac{A}{A-B} - \frac{B}{B-C} \right), \text{ where } A, B, \text{ and } C \text{ represent the time on}$$

trials 1, 2, and 3, respectively ($N=392$). Using 23 unselected subjects, this score correlated zero with the Otis Mental Alertness Test.

Saturday, April 12, 2:00 P.M.

1. SYMPOSIUM: LEARNING AS RELATED TO NEED,
AND THE SUBSEQUENT MOTIVATION OF
SUCH LEARNED BEHAVIOR

ERNEST R. HILGARD, Chairman

Contributors:

CLAUDE E. BUXTON, Northwestern University: Some facts emphasized by the Gestalt (?) school of writers, which require explanation by any thoroughgoing theory of motivation, with special reference to the phenomena of latent learning.

KENNETH W. SPENCE, University of Iowa: New and as yet unpublished empirical results bearing on the problem of latent learning, together with a behavioristic (?) interpretation of the facts so far available in this field.

JOHN L. FINAN, Oberlin College: Additional facts emphasized by both Gestalt (?) and behavioristic (?) writers, which are believed to require explanation by any thoroughgoing theory of motivation.

CLARK L. HULL, Yale University: Some suggestions looking to a behavioristic (?) theory (a) of learning in relation to organic needs and (b) of the subsequent motivation of such learned behavior.

KARL E. ZENER, Duke University: Some suggestions looking to a Gestalt (?) theory (a) of learning in relation to organic needs and (b) of the subsequent motivation of such learned behavior.

CLARK L. HULL, Yale University: Summary.

2. SYMPOSIUM: PSYCHOLOGY AND THE
NATIONAL DEFENSE

(Sponsored by the Ohio University Chapter of Psi Chi)

ELMER A. CULLER, Chairman

Survey of Psychological Work in 1917-1918. HAROLD E. BURTT, Ohio State University.

Survey of Present Problems and Plans. DAEL WOLFLE, University of Chicago.

Selection and Training of Aircraft Pilots. E. LOWELL KELLY, Purdue University.

PROCEEDINGS OF THE TWELFTH ANNUAL MEETING OF THE EASTERN PSYCHOLOGICAL ASSOCIATION

HARRY HELSON, SECRETARY-TREASURER, BRYN MAWR COLLEGE

The Eastern Psychological Association held its Twelfth Annual Meeting at Brooklyn College on April 18 and 19, 1941, under ideal conditions, since the facilities for the giving of papers and caring for the visitors were excellent and the warm bright sunshine made it possible to stand or sit in comfort outdoors between sessions. Six hundred and thirty-three registered during the meeting, 275 of these being guests. The program was made up of 73 contributed papers, 3 round tables, 1 film session, 1 general session, the presidential address, and an employer-employee conference. Over 200 attended the presidential dinner, at which the Association was welcomed by President Harry Gideonse, of Brooklyn College. Past-President F. L. Wells introduced W. S. Hunter, who delivered the presidential address, "On the Professional Training of Psychologists."

Elections and Appointments by the Board. This year a new method of electing the President and two members of the Board of Directors was put into effect: candidates are nominated by the membership and then voted on by preferential ballot. The results of this election were: President, 1940-1941—Gardner Murphy, College of the City of New York; Board of Directors, 1941-1944—Edna Heidbreder, Wellesley College, and Leonard Carmichael, Tufts College. The Board appointed as Treasurer for the term 1941-1944, Lyle H. Lanier, Vassar College, and as member of the Program Committee, J. J. Gibson, of Smith College, who will serve with D. G. Marquis and Louis Max, Chairman. Since the Association is now affiliated with the A.A.A.S., it is entitled to two representatives on the Council, who were named by the Board and approved by the membership: K. M. Dallenbach, Cornell University, 1941-1944; and W. S. Hunter, Brown University, 1941-1943. A. T. Poffenberger, Columbia University, and Douglas Fryer, New York University, were appointed to represent the Association at the celebration of the Fordham Centenary in September.

At the Annual Business Meeting the following actions were approved by vote of the membership:

(1) Proceedings of the 1940 meeting as printed in the *Psychological Bulletin* were accepted.

(2) The reports of the Secretary-Treasurer for 1940-1941 as of April 15 were accepted, and a budget totaling \$805.00 was adopted for 1941-1942.

(3) Changes in the bylaws adopted in 1939 were accepted. The changes of greatest importance are: President and Directors cannot be re-elected to the same office until after the lapse of one year; the office of Secretary-Treasurer is separated into two offices, with one person administering each; individuals outside the territory of the Association may keep membership by special application to the Board.

(4) The paper by Douglas Fryer, "The History of the Association in Relation to the New Bylaws," was made a part of the Secretary's permanent records.

(5) Affiliation of the Association with the A.A.A.S. was approved.

(6) Seventy-three applicants for membership were taken into the Association as members.

(7) A resolution was carried to the effect that the Secretary survey the feasibility of establishing a central clearinghouse of information regarding the training and professional interests of the Association membership and report to the Board, which shall render a decision or submit a concrete plan to the membership by mail ballot for ratification. The sum of \$100.00 was voted for this purpose.

(8) A cablegram greeting the British Psychological Society, meeting in Nottingham, was approved and also a message to Past-President Fernberger, who was ill during the meetings.

(9) A motion thanking the President and Committee on Local Arrangements of Brooklyn College for the courteous reception and convenient facilities was passed.

The Thirteenth Annual Meeting will be held at the Hotel Biltmore, Providence, Rhode Island, on the invitation of the department of psychology of Brown University on April 17 and 18, 1942. The Fourteenth Annual Meeting will be held at Lehigh University, Bethlehem, Pennsylvania, in 1943 on dates to be announced.

The financial condition of the Association is seen from the annual statement by the Secretary-Treasurer, which follows. This statement, together with all records pertaining to it, has been verified by the Auditing Committee consisting of H. S. Oberly, of the University of Pennsylvania, and R. B. MacLeod, of Swarthmore College.

FINANCIAL STATEMENT AS OF MAY 1, FOR THE
FISCAL YEAR 1940-1941

Income

Membership dues for 1940-1941.....	\$ 577.00
Dues paid in advance of 1940-1941.....	5.00
Dues for 1939-1940 received after May 1, 1940.....	64.00
Guest fees for 1940-1941.....	291.00
Interest on savings account in N. Y. Savings Bank.....	9.47
Total Income.....	\$ 946.47

Expenditures

Printing 1939-1940 Proceedings in the <i>Bulletin</i>	\$ 41.56
Treasurer's surety bond	5.00
Program:	
Programs, lapel badges, registration cards	66.18
Program Committee	26.42
Voting supplies and printing	19.35
Secretary-Treasurer's Office:	
Paper, stencils, receipt books	11.05
Clerical assistance	100.00
Postage, telephone, and telegraph	58.05
Committee on Local Arrangements	20.00
Clearinghouse Survey Conference	5.00
Refunds	10.00
Total Expenditures	362.61
Surplus for the Year 1940-1941	\$ 583.86

Balance Sheet

Cash: Fifth Avenue Bank	828.95
New York Savings Bank	821.97
<hr/>	
Capital: As of May 1, 1940	1067.06
Surplus, 1940-1941	583.86
<hr/>	
	\$1650.92
	\$1650.92

The program of the meeting was as follows:

SOCIAL PSYCHOLOGY

OTTO KLINEBERG, Chairman

Dissatisfaction in Work. J. M. SEIDMAN, Brooklyn College.*Sociopsychological Correlates of the Primary Attitude Scales: Religionism and Humanitarianism.* L. W. FERGUSON, University of Connecticut.*Experimental Analysis of Degree of Hunger, Dominance, and Frequency of Frustration in Chimpanzee Social Interaction.* VINCENT NOWLIS, Yale University.*Newspaper Circulation and National Elections.* S. H. BRITT, George Washington University.*Voting Preferences and Changes in Them Prior to the 1940 National Nominating Conventions.* P. M. KITAY, Middlesex Junior College.*Anti-Semitic Prejudice: Some Objective Evidence From Employment Histories.* F. K. SHUTTLEWORTH, College of the City of New York.*Imitation: A Social Application of Learning Theory.* N. E. MILLER and JOHN DOLLARD, Yale University.

CONDITIONING

GEORGE R. WENDT, Chairman

- A Method for Visual Conditioning in Cats.* GLEN RAYSON, University of Rochester.
- A Study of Backward Conditioning in the Avoidance Situation.* W. D. NEFF, Swarthmore College.
- An Experimental Study of Guthrie's Theory of Reinforcement.* J. P. SEWARD, Connecticut College.
- Specificity in the Effects of Motives on Conditioned Behavior.* KARL ZENER, Duke University.
- Is Second-Order Conditioning a Form of Generalization?* J. D. HARRIS, University of Rochester.
- The Effect of Differing Patterns of Reinforcement Upon the Acquisition, Extinction, and Spontaneous Recovery of a Conditioned Operant Response.* F. W. FINGER, Brown University.
- Generalization of Expectancy in a Situation Analogous to Conditioning.* S. B. WILLIAMS, University of Maine.

SENSORY PROCESSES

CLARENCE H. GRAHAM, Chairman

- Certain Problems of Intersensory Relations.* KURT GOLDSTEIN, Tufts College Medical School.
- Experimental Evidence for the Electrical Character of Visual Fields.* W. R. SICKLES, Columbia University.
- The Range of the Spectral Hues.* DEAN FARNSWORTH, New York University.
- More Evidence on the Nature of Cutaneous Warm and Cold.* W. L. JENKINS, Lehigh University.
- The Afferent Basis for Intensity Discrimination in Taste.* CARL PFAFFMANN, Brown University.
- Measuring the White Rat's Choice of Darkness.* K. W. OBERLIN, University of Delaware.
- A Substitute for the Method of Differential Conditioning in the Study of Discrimination in Animals.* W. E. KAPPAUF, University of Rochester.

RORSCHACH METHODS

MARGUERITE HERTZ, Chairman

- Modification of the Rorschach Method for Use as a Group Test.* M. R. HARROWER-ERICKSON and M. E. STEINER, McGill University.
- The Basis of the Validity of the Rorschach Personality Method.* ZYGMUNT PIOTROWSKI, Columbia University.
- Pseudopsychotic Reactions in Rorschach Records of Preschool Children.* BRUNO KLOPFER, Columbia University, and JULIA JACOBY, Wheaton College.
- A Quantitative Approach to Measuring Regularity of "Succession" on the Rorschach Test.* JOSEPH ZUBIN, New York State Psychiatric Institute.

PHYSIOLOGICAL PSYCHOLOGY

ROBERT S. WOODWORTH, Chairman

Activity Changes Following Sound-induced Seizures in the White Rat.

HAROLD SCHLOSBERG and F. W. FINGER, Brown University.

The Electrocorticogram of the Rat in the Passive Stage Following Epileptiform Attacks Induced by an Air-Blast. (Preliminary report.) M. T. LONG, R. T. WALSH, and G. L. KREEZER, Cornell University.*Conditioning the Occipital Alpha Rhythm in Man.* CHARLES SHAGASS, University of Rochester.*Simultaneous Recording of Eye-Movements in Reading and Other Physiological Processes During Long Periods of Activity.* L. CARMICHAEL and B. WELLMAN, Tufts College.*An Electrical Study of the Effect of Partial Section of the Eighth Nerve.* D. R. GOOD, University of Rochester.*Converting a Spinal Conditioned Response Into a Reflex in the Isolated Cord of the Dog.* P. S. SHURRAGER, University of Pennsylvania, and H. C. SHURRAGER.

LEARNING AND MEMORY

JACK W. DUNLAP, Chairman

A Study of the Function of Reward. HANS WALLACH and MARY HENLE, Swarthmore College.*An Analysis of Factors Contributing to "Latent Learnings."* J. M. PORTER, JR., Carnegie Institute of Technology, and H. W. KARN, University of Pittsburgh.*Apparent Lengths of Lines, and Their Mnemonic Aftereffects.* C. C. PRATT and P. V. MARCCHETTI, Rutgers University.*Cross-modal Interaction in Memory Theory.* R. W. BURNHAM, Rutgers University.*An Analysis of Errors Made in the Learning of Prose Material.* C. N. COFER, George Washington University.*Mental and Keyboard Overlearning in Memorizing Piano Music.* GRACE RUBIN-RABSON, New York City.

PERSONALITY AND ABNORMAL PSYCHOLOGY

HARRY HOLLINGWORTH, Chairman

Test Score Patterns in Schizophrenia and Nonpsychotic States. A. I. RABIN, New Hampshire State Hospital.*Inferiority Attitudes and Their Correlations Among Children Examined in a Behavior Clinic.* LUTON ACKERSON, New York University.*Vegetative Phenomena in the Psychoanalytic Hour.* BELA MITTELMANN and H. G. WOLFF, Cornell University Medical College.*Criteria for Mental Hospitalization.* J. D. PAGE, University of Rochester.
Trait Variance Based on Matrices of Intercorrelations. M. G. PRESTON, University of Pennsylvania.*The Stability and Some Correlates of Group-Status in a Summer Camp for Young Boys.* R. L. SOLOMON and J. McV. HUNT, Brown University.

AUDITORY PROCESSES

KARL M. DALLENBACH, Chairman

Vitamin A Deficiency and Its Relation to Hearing. MERLE LAWRENCE, Princeton University.

The Intensive Difference Limen in Audition. FORREST L. DIMMICK and RUTH M. OLSON, Hobart College.

Pitch Discrimination at High Frequencies. E. G. WEVER and C. H. WEDDELL, Princeton University.

Theory of the Neural Quantum in the Discrimination of Loudness and Pitch. S. S. STEVENS and C. T. MORGAN, Harvard University, and J. VOLKMANN, Columbia University.

The Effect of Parathyroid Extract Upon Tonal Conditioning and Thresholds E. A. LIPMAN and E. CULLER, University of Rochester.

PERSONALITY

GARDNER MURPHY, Chairman

The Economy of the Personality. LESLIE ERDOS, Essex Junior College.

The Relation of Evaluative Attitudes to Vocational Interest and Social Adjustment. SETH ARSENIAN, Springfield College.

Differential Effect of a Social Variable on Levels of Aspiration. J. A. BAYTON and M. G. PRESTON, University of Pennsylvania.

Leadership in College Extracurricular Activities as Related to the Bernreuter Personality Measures. H. M. RICHARDSON and N. G. HANAWALT, New Jersey College for Women.

Relation of Childhood and Adult Leisure Activities. CATHERINE PATRICK, New York City.

A Comparison of Projective Methods of Studying Personality in Preschool Children. LOIS MURPHY, Sarah Lawrence College.

A Quantitative Analysis of Individuality in Speech. F. H. SANFORD, Hofstra College.

Rhythm in Personality Expression. WERNER WOLFF, Columbia University and Vassar College.

Facial Expression of Emotion in Blind Children. JANE THOMPSON, Columbia University.

BRAIN FUNCTIONS

KARL S. LASHLEY, Chairman

The Effect of Bilateral Lesions at Various Levels in the Auditory System of the Cat. K. D. KRYTER, University of Rochester.

Functional Organization of Acoustic Fibers in the Thalamus of the Cat. J. D. COAKLEY and E. A. CULLER, University of Rochester.

The Effect of Cortical Extirpation Upon Pitch Discrimination. WILLIAM ECCHER, University of Rochester.

An Electrical Study of Frequency Localization in the Auditory Cortex of the Cat. J. C. R. LICKLIDER, University of Rochester.

The Effect of Unilateral and Bilateral Frontal Lobe Extirpation on the Behavior of Monkeys. C. J. WARDEN, WILLIAM GALT, and S. E. BARRERA, Columbia University.

Performance of Normal and Prefrontal Animals in Indirect Delayed Response With Varied Conditions of Extraneous Visual Stimulation. R. B. MALMO, Yale University.

The Role of the Commissural Pathways of the Corpus Callosum in the Kinetics of Movement, and Movement Coöordination in Man. K. U. SMITH, University of Rochester.

Flicker Discrimination in the White Rat Following Striate Area Lesions. MILDRED JENKINS, University of Rochester.

EDUCATIONAL PSYCHOLOGY

JOHN P. TURNER, Chairman

Empirical Probability in a Free Two-Choice Situation. W. A. BOUSFIELD, University of Connecticut.

Developmental Changes in Attitude as One Factor Determining Energy Output in a Motor Performance. VERA DAMMANN, Columbia University. *Capacity for Generalization in Mental Defectives as Measured by Performance in Sorting Tests.* S. J. HOLTZBERG, National Youth Administration, New York City, and E. F. KINDER, Letchworth Village.

An Evaluation of the Wechsler-Bellevue Intelligence Tests for Use on the College Level. SILVIA FISHBEIN, Temple University.

A Study of Fine and Gross Motor Abilities. HAROLD SEASHORE, Springfield College.

The Frequency Ratings of Common Words as Measures of Their Difficulty. F. B. DAVIS, Coöperative Test Service, New York City.

Creative Numberwork. CATHERINE STERN, New School for Social Research.

Influence of Junior High School on Pupil Attitudes. H. S. TUTTLE, College of the City of New York.

ROUND TABLES

Current Problems in the Rorschach Method of Personality Diagnosis. BRUNO KLOPFER, Chairman, Columbia University.

Level of Aspiration. J. J. GIBSON, Chairman, Smith College. (Auspices: Society for the Psychological Study of Social Issues.)

Formation and Change of Opinions and Attitudes. S. E. ASCH, Chairman, Brooklyn College.

FILMS

EDWARD GIRDEN, Chairman

Testing the IQ. G. M. GILBERT and H. E. GARRETT, Columbia University. *Color Vision.* G. M. GILBERT.

Problems of Intersensory Relations. KURT GOLDSTEIN, Tufts College Medical School.

EMPLOYER-EMPLOYEE CONFERENCE

GARDNER MURPHY, Chairman

PRESIDENTIAL ADDRESS

"On the Professional Training of Psychologists"

WALTER S. HUNTER, Brown University

GENERAL SESSION

WALTER S. HUNTER, Chairman

Brain Areas Involved in the Reproductive Behavior of Vertebrates. FRANK BEACH, American Museum of Natural History.

The Constitutional Basis of Temperament. WILLIAM H. SHELDON, Harvard University.

The Relationships Between Anthropology and Psychology. RALPH LINTON, Columbia University.

PROCEEDINGS OF THE TWENTY-FIRST ANNUAL MEETING OF THE WESTERN PSYCHOLOGICAL ASSOCIATION

RALPH H. GUNDLACH, SECRETARY-TREASURER,
UNIVERSITY OF WASHINGTON

The Twenty-first Annual Meeting of the Western Psychological Association was held at the University of California on Friday and Saturday, June 13 and 14, 1941. A total of 123 persons registered, and 58 papers were read in the six sessions.

The treasurer reported as of February, 1941, a carry-over of \$75, dues received \$84, and a total expenditure of \$123, leaving a balance of \$36. The question of amending the bylaws concerning membership was raised, and the motion by Warner Brown that membership be restricted to Members and Associates of the A. P. A. residing in this area was passed; the ruling is not to be retroactive.

Officers elected for the coming year were: President—Ernest R. Hilgard, Stanford University; Vice-President—Howard C. Gilhousen, University of California at Los Angeles. The Association is scheduled to meet next year at the University of Washington, probably June 19 and 20, 1942.

Retiring President Mary B. Eyre addressed the Association after the annual banquet on the topic: "Psychology in Armageddon."

PROGRAM

GENERAL

Friday Morning, June 13

CALVIN P. STONE, Chairman

How an Individual Evaluates His Unverified Guesses. ROBERT M. GOTTS-DANKER, University of California. (Introduced by Warner Brown.)

Ten successive trials were given in which 474 subjects guessed whether a brass or copper plate had been placed on a table which was screened from their view. In one procedure, subjects were not informed of the correctness of choices made. The copper plate was always the one on the table. In the other procedure, subjects were told the correct alternative after having made each choice. The two plates were placed on the table in a prearranged order.

The proportions of subjects guessing copper and brass on a given choice were determined for subjects who had been correct on all previous choices in the corrected procedure. Corresponding proportions were found for subjects who in the uncorrected procedure had followed the same order of previous choices. There is a close agreement between the sets of proportions. Subjects apparently regard their uncorrected choices as having been correct.

The Tension Values of Differently "Structured" Situations. JOSEPH B. COOPER, San Jose State College.

This experiment was designed to study the effect of differently "structured" delay situations on human performance: the appearance, or non-appearance of, and the extent of, produced tensions. Subjects learned 25 nonsense syllables. During this learning time halved records were kept of errors and time. After two nonerror performances, subjects were interrupted in the middle of the next run. At this point one group was told to relax, another group to read rapidly a list of difficult names (in preparation for a test on their pronunciation). After two minutes both groups were given the thirteenth syllable and started on from there.

Subjects in the first group were not affected by the detention; those in the second group showed significant increases in time. It is assumed, then, that different tensions result from differently "structured" performance requirements and that the tension values of such imposed conditions may be measured by this simple technique.

Psychological Basis of Errors in the Gallup Election Polls. ROBERT C. TRYON, University of California.

The statistic, called Gallup's Error, calculated as the per cent given for Roosevelt given by Gallup's poll on the eves of the 1936 and 1940 elections minus the actual election per cent for Roosevelt, is analyzed by states. These errors show negligible bias for the Republican presidential candidate in states sure for Roosevelt, but significant bias for the Republican in states with heavy electoral vote in which the Gallup poll also indicates that the election might go either way. The effect of the poll bias on the election result is considered. Various hypotheses of the causes of the bias are examined, the most probable being chosen as fear of pollee in expressing his true opinion. The importance of discovering the prestige and other social effects of poller on pollee, when both live in the same community and when the poll ballot is open, is stressed.

The Elements of Individuality in Simpler Organisms. A. R. MOORE, University of Oregon.

Sherrington's statement that, in the vertebrates, functional solidarity goes hand in hand with brain development can be extended even more strikingly to the invertebrates. In these the degree of individuality in action is linked to the development of (1) the central nervous system and (2) dominating ganglia. Even so, amoeba and plasmodium, without any nervous elements whatsoever, are able in their activities to adapt them-

selves to their environment. To what degree is a plasmodium an individual in its conduct, and how is this internal relationship accomplished?

Is It Practicable to Compare "Intelligence" and "Achievement"? LIDA H. HAGGARTY and NOEL KEYS, University of California.

The AQ's of 163 children of the California Adolescent Study were traced from fifth to ninth grade. EQ's used were derived from eight administrations of the Stanford Achievement battery, and IQ's from one administration of the Stanford-Binet, one of the CAVD, two of the Kuhlmann-Anderson, and four of the Terman Group Test.

AQ's based on the various intelligence tests showed an average intercorrelation of only .35. Cureton's regression technique gave an average of .39, and Pintner's difference method bettered this only slightly. The average correlation between EQ's and IQ's was higher than the mean intercorrelation of IQ's themselves (.88 vs. .85 after correction for attenuation). A composite IQ derived from all eight intelligence measures correlated .94 (corrected, .95) with a composite EQ from the eight testings. Hence the common attempts to draw conclusions from disparities between pupils' educational "achievement" and their supposed "capacity" seem precarious in the extreme.

Violence Within the Nation. GEORGE M. STRATTON, University of California.

At an earlier meeting there was suggested a common explanation of various forms of violent behavior, international and domestic, with chief attention then to the international. Attention will now be confined to domestic violence.

Of crime, some of the current explanations, often rivals, may now be given a reasonable interconnection.

Toward preventing violence generally, one should recognize the dynamic process by which the nation-community actually abolishes violence in nearly all areas of its domestic behavior and also recognize, in the areas of behavior where there is delinquency, crime, industrial violence, and rarely even civil war, certain conditions which offer high resistance to the community's dynamic process.

A scientific understanding of this process and of the obstructions to it may well assist the nation to be both more orderly and coöperatively more effective.

Stereotypes of Musical Eminence. PAUL R. FARNSWORTH, Stanford University.

This paper presents a study of two of the three procedures historically employed to measure eminence in music. The amount of space devoted to each member of a selected list of 92 musicians was calculated for 18 encyclopedias. These encyclopedias were divided into musical and lay; the former were subdivided into the current, those of the '20's, and those issued before this period. Studies were made of the changes in eminence position over a considerable period of time and of the variabilities among

the several encyclopedias. Some attention was also paid to music histories.

These eminence ranks were compared with others obtained through pooling the ballots given by college students and by musicologists who had been asked to name the 10 greatest musicians of history. When the "space" and the "balloting" methods were compared, r 's from .54 to .78 were found. The relationship was far closer when only the high ranking portion of the list entered into the comparisons.

Recent Studies in Moral Conflict at the Iowa Child Welfare Research Station, University of Iowa. TAMARA DEMBO, University of Iowa.

In Beatrice Wright's initial study of moral conflict, children were offered four pairs of toys, each pair consisting of a more and a less desirable toy. In one situation the children were to distribute the toys between a friend and a stranger. In another situation they were to keep one toy and give away the other to another child. The decision was found to depend upon the subject's social relationship to the other child. In the first situation the five-year-olds favored the friend, the eight-year-olds the stranger. In the latter situation "selfishness" differed with age, all five-year-olds being "selfish," while eight-year-olds varied greatly in "generosity." Also, "selfish" children judged others as "selfish" while "generous" children judged them as "generous."

A second study being made by Dr. Dan Adler in collaboration with the Chicago Institute for Psychoanalysis uses experimentally created moral conflict to investigate repression in clinical patients and normals.

SESSION A. GENERAL EXPERIMENTAL

Friday Afternoon, June 13

C. W. BROWN, Chairman

Experimentally Induced Changes in Fetal Behavior. DORIAN ROSE, University of California. (Introduced by C. W. Brown.)

The responses to deep pressure stimuli of fetal animals, from normal and hyperthyroid mothers, were compared on two rating scales. The amount of bodily movement was rated on a six-point scale ranging from absence of movement to movements of the whole body. Purposiveness was rated on a three-point scale. The technique of inducing hyperthyroidism, the preparation of the fetuses, the stimuli employed, and the results obtained will be discussed.

Utricular Discrimination. STEVENSON SMITH, University of Washington.

Which of the two eyes is stimulated by light might presumably be known to us through retinal cues alone or by secondary kinesthetic cues resulting from eye-movements. The results reported seem to indicate that it is only by means of kinesthetic cues that the discrimination can be made. When a single point of light is flashed on one eye or the other, this may be reliably identified as a right eye or left eye stimulus, even though it stimulates the fovea. When two flashes of light are used, both

of which stimulate one eye, or one of which stimulates one eye and one the other, and when these flashes are symmetrically opposite to each other with reference to the fixation point, the subject's judgment as to whether right eye, left eye, or both eyes are stimulated does not deviate from chance. This is probably the result of the obliteration of muscular cues.

The Relative Effects of Sleeping and Waking Periods Upon the Retention of Nonsense Syllables. JACK R. GIBB, Stanford University. (Introduced by Calvin P. Stone.)

A study was made of six male subjects in an attempt to determine the relative effects upon the retention of nonsense syllables of varying intervals beginning either with sleep or with waking activities. The intervals were 24, 48, 72, and 96 hours in length and were of two types. The "sleeping" periods began at the subjects' bedtime, at which time the subjects retired with the intention to sleep. The "waking" periods began with ordinary morning waking activities. Ten-syllable lists were presented by the anticipation method to the subjects in their sleeping quarters by means of a memory drum. Savings scores indicate consistent, but statistically unreliable, differences in favor of retention of the syllables followed immediately by sleep. The results may be interpreted as bearing upon the question of the influence of the temporal position of the interpolated activity and upon the Müller-Pilzecker theory of perseveration.

The Effect of Vitamin "A" on Color-Vision Deficiencies. R. D. LOKEN, University of California at Los Angeles.

The experiment to be reported upon consists of a preliminary investigation of the remedial potentialities of Vitamin "A" in work with subjects displaying color-vision deficiencies.

Sixteen subjects were selected from college classes at U.C.L.A. by using the Nela Test of Color Vision and the Ishihara Color-Blindness Test, all of the subjects showing marked color-vision defects, according to the tests. These subjects were divided into two groups, eight in each group, the members of Group A being matched according to error scores as closely as possible with the error scores of Group B.

Subjects in Group A were given 12 Vitamin "A" capsules, each capsule containing 25,000 units, and were told to take one capsule per day for 12 days. The members of Group B were given similar appearing capsules made up of milk-sugar and were told that it was Vitamin "B."

Scores on the Nela Test, following dosages, showed a drop of more than 50% in the error scores of the Vitamin "A" group and only a negligible change in the error scores of the control group.

The Dependability of Typical College Aptitude Test Scores. HOWARD R. TAYLOR, University of Oregon.

Data in regard to the reliability, over various intervals of time, for four of the most widely used college aptitude tests have been reduced as nearly as possible to the same range to indicate the approximate limits

within which a single score, derived at entrance, can be considered representative of potentiality for scholastic achievement throughout the period of college training. Some evidence is presented with reference to the probable effect of differential motivation and differential growth on such test scores.

Tests for the Selection of Inspector-Packers. EDWIN E. GHISELLI, University of California.

The duties of inspector-packers in a pharmaceutical supply house consisted of (1) filling capsules, vials, and bottles with serums, antitoxins, and similar materials, (2) examining the filled containers for the presence of extraneous foreign matter, (3) labeling the containers, and (4) cartoning and packaging them. A combination of the ratings of the supervisor and forelady was used as the criterion of job success for the 26 girls who were studied. Several tests were administered to this group of employees, and the following validity coefficients were obtained: Minnesota Paper Formboard, .57; pegboard, -.50; Minnesota Rate of Manipulation-Turning, -.40; Minnesota Rate of Manipulation-Placing, -.24; Minnesota Vocational Test for Clerical Workers—Number Comparison, .29; Minnesota Vocational Test for Clerical Workers—Name Comparison, .26; and the MacQuarrie Test for Mechanical Ability, .19.

Internship Training for the Profession of Applied Psychology. HERMAN DE FREMERY, Alto Psychologic Center.

The American Association for Applied Psychology has appointed a Clinic Certification Committee to draw up standards for institutions acceptable as training centers for applied psychologists. This is a preliminary statement of one member of the Committee.

The objective to be attained in the internship is to fit the student-psychologist for competent practice without supervision. It is suggested that two years of practice under close supervision is necessary to achieve this result in the fields of clinical and industrial psychology. A Certificate of Internship would therefore certify to 468 days of practical training.

To qualify as a training center, an institution should meet certain stated requirements as to staff, library, and testing equipment. It should be reported on independently by two representatives of the Committee. A Certificate of Internship granted by the Association would have a standardized value.

The Radio Listening Preferences of Public School Pupils in the First Five Grades. HARRIET E. NEALL, University of California. (Introduced by Frank N. Freeman.)

The radio listening preferences of 277 pupils were investigated by means of a standardized interview. One program, the *Lone Ranger*, was named by one-third of the subjects as first or second choice. This finding was confirmed by an independent study.

Degree of like or dislike for 11 different types of radio programs was rated on a five-point scale. Comedy and exciting dramas were favorites at all five grade levels, while symphony concerts were least preferred.

Coefficients of contingency were computed between the ratings of 57 fifth-grade pupils. The coefficients ranged from .33 to .59 and were mostly of the order of .45. The first factor was extracted by Thurstone's centroid method. The first factor residuals are of insignificant size, suggesting that one factor accounts for the original coefficients.

Factors Determining Pro-Union Scores on the Newcomb Test. BETTY CHAMBERLEN, University of Washington. (Introduced by Ralph H. Gundlach.)

The S.P.S.S.I. Yearbook, *Industrial conflict*, contains a questionnaire by Newcomb which he employed to measure the attitudes of union members from the point of view of considering unions or management as the properly dominant agent in society. The aim was to contrast A.F.L. and C.I.O. This study employs the same questionnaire, but is concerned with the determination of the more easily identifiable background factors in the worker's history which tend to make his judgments more employer- or employee-minded.

An Objective Rating Form for Measuring Job Success. VICTOR GOERTZEL, University of California. (Introduced by Edwin E. Ghiselli.)

The need for a reliable rating form that could be applied in a wide variety of jobs and that would reduce halo effects and the unwillingness of foremen to make quantitative ratings of their workers prompted the construction of two equivalent rating forms of 25 items each.

Statements actually made by employers, supervisors, and foremen in describing particular workers were collected from a variety of sources and given to a number of judges to rate according to the method of equal-appearing intervals. Fifty of the more reliable statements were used in the two scales.

Applications of the rating forms have been made to clerical and production workers. Correlations between scores obtained on the rating forms and independent ratings and between the two forms indicate satisfactory reliability and validity in a variety of different tasks.

SESSION B. ADOLESCENT PERSONALITY

Friday Afternoon, June 13

PAUL R. FARNSWORTH, Chairman

Scores F, U, N, and T From the Read-Conrad Inventory for Nursery School Children. KATHERINE H. READ and HERBERT S. CONRAD, University of California.

An abbreviated form of the California Behavior Inventory for Nursery School Children was prepared, on the basis of judgments of significance of various traits by clinical psychologists and nursery school teachers. From ratings of children on the abbreviated scale of traits, a score was obtained—*F*, for a child's *favorable* deviations from the average for his group; *U*, for *unfavorable* deviations; *N*, for *net deviation* (*F* minus *U*); and *T*, for *total deviations* (*F* plus *U*). Theoretical limitations and values

of these scores will be discussed, together with data on reliability and validity.

Factors in Adolescent Development Related to School Adjustment. HELEN M. BARKER, University of California. (Introduced by Harold E. Jones.)

A report on a statistical exploration for factors related to school adjustment of 89 adolescents judged well or poorly adjusted by two clinical psychologists on a basis of seven years familiarity with these children. Adjustments to (1) teachers, (2) discipline, and (3) school work were appraised separately. Twenty-four items pertaining to ability, achievement, anthropometry, physiological maturity, and personality were selected for examination from records collected over a seven-year period in connection with the University of California Adolescent Study. Differences between the means of various "good" and "poor" adjustment categories were examined for statistical significance. Significant differences (Critical Ratio 3 or greater) were found in 12 instances, fulfilling the purpose of this study in suggesting fruitful lines for more intensive research in an effort to ferret out the crucial factors in school adjustment of adolescents.

Relationships Between Self-Reports and Personality Ratings in Adolescents. ELSE FRENKEL-BRUNSWIK, University of California.

Ratings based upon observations in specific situations, though valuable for developmental studies, have not shown significant statistical relationships to scores on an adjustment inventory and to other types of self-reports. Inspection of additional data suggested that self-reports might be determined by motivational tendencies and attitudes underlying behavior rather than reflect overt behavior directly. Ratings similar to those used by Murray were introduced, providing for judgments of "drives" based on inferences from observation in a variety of situations during an extended period. Other ratings summarized general impressions of subjects' attitudes and abilities.

Correlations indicate that boys rated high on the drives for "abasement" and "succorance" and on the traits "insecurity" and "introspection" give highly maladjusted responses, whereas girls give maladjusted responses when rating low on the drive for "achievement" and on the traits "personality adjustment," "security," "self-sufficiency," and "seriousness of efforts."

An Attempt to Determine Some of the Causal Factors Behind the Formation of Ethical Standards of Junior College Students. ROSE DONNELLY, University of Southern California. (Introduced by Neil Warren.)

A questionnaire, designed to discover attitudes and opinions regarding moral and ethical standards, was administered to 462 junior college students. Results of personality and intelligence tests were obtained from the school records.

According to these opinions, parental, rather than church or social,

influences are most effective in regulating behavior. Students who said they were guided by religious teachings presented a healthful attitude toward moral habits, rights of others, and maintenance of standards. A contrary point of view was expressed by students who reported being influenced largely by social approval. A high correlation was found between the latter group and strict home discipline.

Qualities desired in a husband or wife: companionship, health, mental capacity, charm, and religion. In choosing a vocation: interest in work, security, personal independence, inspiring, comforting, and jovial. A discriminating attitude toward the church was evidenced; only doctrines they believed reasonable or scientific were accepted.

Judgments of the Reputation Test as Expression of the Personality of the Judge. JUDITH CHAFFEY, University of California. (Introduced by Mary Cover Jones.)

Opinions of adolescents about each other were obtained by means of a Reputation Test given at regular intervals over a seven-year period. The judgments of a group of 20 were analyzed to determine for each judge (1) the extent of disagreement with the group, (2) the proportion of unfavorable judgments of self and others, (3) the number of omissions of items, (4) the areas in which disagreement, unfavorable mention, and omission occurred. Motivational patterns were then derived from this material. Significant relationships were found between fluctuations in these patterns and fluctuations in growth.

The findings suggest that material obtained from this test may be used as an aid to understanding the dynamics of individual development.

The Interests of Adolescents. MARY COVER JONES, University of California.

To investigate the development of interests in adolescence, an interest inventory was administered annually to the same group of approximately 200 boys and girls from the fifth through the twelfth grade. As part of a larger study, a variety of observations and measurements were obtained on the same group.

Percentile curves give the age trends for representative items and for category scores (social, physical activity, maturity, and the like). Sex differences in interests and in trends are similarly presented. Some relationships of interest scores to other measures (*i.e.* assessments of physical maturity, ratings of social behavior) will be discussed.

Analysis of the records of individual cases will serve to suggest the role which interests may play in development.

Body-Build in Adolescents Studied in Relation to Rates of Anatomical Maturing, With Implications for Social Adjustment. NANCY BAYLEY, University of California.

Using Todd standards for X-ray assessments of bone maturity, 175 children in the University Adolescent Study were classified according to

early, average, and late CA at attaining skeletal maturity. Differences in body-size and build which would appear to be significant for adequacy of social adjustment were found. For example, early-maturing boys are both tall and broad-built for their age and maintain superior or average size as they mature. Late-maturing boys and girls are small for their age in preadolescence, but become relatively tall as they mature. The late-maturing boys have builds most deviate from the characteristically feminine build. In terms of social mores, the late-maturing boys change from an unfavorable to a favorable physical status, while for the late-maturing girls the reverse is true. The early-maturing boys have least cause for problems from this source.

Autistic Gestures Displayed by Young Children in an "Insecure" Situation.

J. M. MACDONALD, Scripps College.

Twenty-four children, ranging in age from 11.2 to 30.1 months, were observed in a relatively "secure" situation, viz., a strange room in which the mother was present, and in an "insecure" situation, viz., a strange room in which the child was left alone. Children in the "insecure" situation displayed a large number of autistic gestures, defined as movements and postures that are not clearly adaptive, *i.e.* directed with reference to goal regions of the situation. Autistic gestures include self-manipulations, covering movements, rocking movements, leaning postures, acts of emotional aggression, restless shifts, hesitant acts, and playful, or boisterous, movements. As the strange situation became familiar and "secure," the quantity and quality of autistic gestures altered: the total quantity of all types of gestures decreased, and the characteristic type of gesture shifted from regressive self-manipulations to outgoing movements that increasingly approximated adaptive behavior.

Bergson and Gestalt Psychology: Corollary Critiques of Scientific Method in Psychology. JEAN MCQUEEN IRWIN, San Francisco Juvenile Court.

The doctrines of Henri Bergson and of contemporary Gestalt writers represent allied reactions against traditional methods involving conceptual analysis which, they maintain, yield only elements which, torn from the living context of behavior, are only static and discontinuous symbols. The synthesis of such dead artifacts can therefore provide no satisfactory explanatory generalizations.

The suggested antidote for the ailments of analysis is a phenomenological appeal to immediate observation by means of "intuition," explicitly described by Bergson and implied by Gestalt psychologists. But intuition alone proves scientifically inadequate, to the extent that it is esoteric and mystical. Consequently, despite the initial rejection, both theories are forced ultimately to sanction analysis so long as "intuition" assures that the elements are psychologically real rather than abstract, experiential rather than merely conceptual.

The unsolved problem in psychological method thus remains that of devising scientifically investigable constructs which are faithful to the experientially actual.

SESSION A

Saturday Morning, June 14

H. C. GILHOUSEN, Chairman

Changes in the Galvanic Skin Response Accompanying Reports of Changes of Meaning During Oral Repetition. MOLLY MASON JONES, Scripps College. (Introduced by Mary B. Eyre.)

This study attempts to correlate changes in the galvanic skin response with certain mental states. The mental states selected were changes in meaning.

Three types of meaning change were studied, one in each of three experiments: (1) "Certainty-of-Meaning," i.e. certainty of recall in learning a series of nonsense syllables; (2) "Discovery-of-Meaning" in material which at first sight appears to be comparatively meaningless; (3) "Loss-of-Meaning" reported by subjects when a familiar word no longer "makes sense."

A relationship between galvanic skin response and these mental states was demonstrated. In experiment (1) the greatest galvanometric change occurred during periods of the most uncertainty, the least during periods of the least uncertainty; in (2) reports denoting discovery of meaning were accompanied by the most galvanometric change; and in (3) the most change occurred during intervals in which signals of loss of meaning had been given.

An Evaluation of Observational Records in a Longitudinal Study. FRANCES BURKS NEWMAN, University of California. (Introduced by Mary Cover Jones.)

Observational records used during a seven-year period in the University of California Adolescent Study will be discussed with reference to some of their advantages and limitations. The techniques have included both ratings and qualitative reports, based upon observation in "standard" situations at half-year intervals and in other social situations such as overnight excursions and parties. Ratings have provided basic comparable measures of behavior and have also served to focus observation. Qualitative reports have constituted an invaluable supplement to the ratings by furnishing concrete illustrations, descriptions of settings, cues for clarification of raters' discrepancies, and means for representing changes in individual behavior not reflected in the ratings. Ratings and descriptions used together have clarified several questions related to halo. Specific forms of recording (including reports based on conferences among observers) will be discussed, with illustrations from case material.

The Effect of Repeated Exposures to Lowered Oxygen Tensions on Learning. NATHAN W. SHOCK and ROBERT O. SCOW, University of California.

Rats were trained to make visual discriminations of form under conditions of lowered oxygen tension. Reduction of the oxygen content of the inspired air to 12-15% produced no measurable change on a black-white discrimination which had been learned under normal O_2 concentrations.

Animals who had not shown any reduction in errors in discrimination between an upright and inverted triangle after 90 trials in an atmosphere containing 10% O₂ showed a rapid drop in errors (and time) when the oxygen concentration was raised to normal (21%). When the oxygen concentration was again reduced to 10%, the errors (and time) increased markedly.

There is also evidence that with repeated exposures to low O₂ the reduction in excellence of performance becomes more marked.

The Value of the Electroencephalogram as Compared With the Clinical and Pneumoencephalographic Findings for the Localization of Brain Lesions. H. SJAARDEMA and M. A. GLASER, Los Angeles, California.

Seventy-five cases of brain lesions, consisting of idiopathic epilepsy of focal and nonfocal nature, traumatic epilepsy, brain tumors, vascular lesions, hydrocephalus, and congenital abnormalities, have been studied by each of these methods for the purpose of finding focal lesions.

In addition the Alpha, Beta, and Delta abnormalities have been investigated by means of the electroencephalograph and compared to the various abnormalities found by the pneumoencephalogram, such as increased and decreased cortical air, inequality of the ventricles, ventricular shifts, etc.

The air studies localize gross abnormalities, whereas the electroencephalogram localizes intracerebral pathology. Consequently, the combined findings of the two methods are of untold value for the localization of operable brain lesions.

The Ability of Rats With Hemisectioned Spinal Cords and Normal Rats to Discriminate Differences in Linear Distances. C. W. BROWN, University of California.

In attempting to prevent the rat from utilizing sensory cues of a kinesthetic nature in the learning or retention of the maze, some investigators have severed the dorsal tracts of the spinal cord. This method has been called into question as a valid means of cutting off all information which the rat might receive from his movements in the maze. An apparatus for testing the rat's ability to discriminate differences in linear distances was devised which seems to involve the use of only kinesthetic cues. Sectioning of the dorsal tracts of the cord in rats did not retard the learning of the discrimination or increase the threshold of discrimination.

Changes in Working Habits of Rats in a Sand-digging Problem, Following Removal of the Food Incentive. CALVIN P. STONE, Stanford University.

Adult rats, 12 in number, were given preliminary exploratory experience in the sand-tube obstruction apparatus (Stone). After this they were given a 30-minute practice period daily without external incentive, followed by a 15-day practice period with food incentive. In the latter period each rat was required to remove one gallon of sand to reach his

daily ration. Finally, there was a 30-minute digging period without hunger or food incentive for 15 days. The purpose of this was to determine to what extent working habits set up while the animals worked for their daily ration would persist in the absence of hunger and food incentive. All of the rats continued to work for a few days, but the persistence and amount accomplished gradually dwindled in all cases.

An Attempt to Produce "Neurotic" Behavior in Rats. EVELYN GENTRY and KNIGHT DUNLAP, University of California at Los Angeles.

This is a preliminary report of a study of disturbed behavior in rats, produced by prolonged training in a two-compartment shock box in which they were first trained to "shuttle" from one compartment to a second one in response to electric shock in the floor grid. When this habit was established, the grids of both compartments were electrified in the ratio 1:2. Finally, the shock in the two grids was equalized, constituting a conflict situation since the animals could not escape from the shock. The nature of the disturbance was tested in a second situation in which the animal learned to push open two doors in succession in order to obtain food. The experimental group, compared with a control group, showed atypical behavior of an interesting type in the second situation.

A Study of the Generality of Inherited Maze-Brightness and Maze-Dullness. LLOYD V. SEARLE, University of California.

Determination of the psychological nature and extent of generality of the inherited difference in maze-learning ability of Tryon's bright and dull strains is of considerable significance to psychological and genetic theory. The writer has undertaken a series of experiments designed to yield a description of the behavior organization of brights and dulls in a number of rate problems. Thirty-three measures of performance have been taken on a sample of rats chosen from the twenty-second generation, and the scores of brights and dulls scaled with reference to a median strain as a standard population. Results indicate that each of the two strains has a characteristic organization of abilities. A summary chart is presented.

Instrumental and Equivalence Beliefs. EDWARD C. TOLMAN, University of California.

The products of learning are beliefs. Both trial-and-error learning and conditioned-response learning result in beliefs. Trial-and-error learning results in means beliefs and in hindrance beliefs. These may be called two subvarieties of instrumental beliefs. Conditioned-response learning results in sign beliefs. These may be classed as still a third subvariety of instrumental belief.

Further, the carrying over (as shown in transfer experiments) of means, hindrance, or sign beliefs acquired in connection with one type of object or situation to other more or less similar, or to other more or less frequently contiguous, objects or situations will be defined as an indication of equivalence beliefs.

Such transfers—such equivalence beliefs—often turn out to be unduly persistent, even when the environmental setup changes so as to prove them wrong. In these cases, in which the equivalence beliefs do thus appear unduly rigid and persistent, these beliefs may be said to be both irrational or traumatic and erroneous.

The job of clinical psychology consists in large part in the breaking down in the patient of just such traumatic and erroneous equivalence beliefs.

SESSION B

Saturday Morning, June 14

HOWARD R. TAYLOR, Chairman

Changes in Student Opinion About Ways to Peace. RALPH H. GUNDLACH, University of Washington.

About five years ago a study was made of the opinions of college students about war, the R.O.T.C., estimates of the causes and cures for war, and, finally, estimates of their own line of conduct if and when the United States approached an aggressive or a defensive war.

Now again, as the war tension abroad and at home increases, the same questions have been asked of the current student population. The shifts in opinion are in the direction of a more war-like attitude for both men and women; toward belief in the character-building effects of R.O.T.C.; and reflect a general readiness to participate in war from a sense of duty. There is a greater uncertainty as to the causes and preventives of war.

The Measurement of Tension in the Rat. FREDERIC M. GEIER, University of California.

Research in non-goal-directed aspects of behavior in rats, such as the effects of conflict and frustration, emotionality, and personality, has been suffering from lack of a method of measurement and lack of a unifying theory. A tentative theory is offered using the concept of tension—a restless psychophysiological state of the organism from which both goal-directed and non-goal-directed behaviors are derived. A method is suggested for getting a systematic expression and measure of such tension by allowing the animal to "work it off" in the well-known activity wheel.

An illustrative experiment in the measurement of goal-anticipatory tensions is reported, in which it is found that tension, as expressed in activity, is a direct function of expectation of a goal object when hunger is held constant. Other experiments in progress or projected, using the experimental activity wheel method, are mentioned: a goal (activity) gradient study; a learning problem (in which activity tension is correlated with stage of learning and with VTE); "neurotic tension" studies.

The Lower Senses as Sources of Literary Appreciation. EDWIN D. STARBUCK, Los Angeles, California.

It has progressively become evident that the meanings and values conveyed in literature, and perhaps in the other arts, are much condi-

tioned by the types of imagery employed. For long it was thought that there are five special senses: sight, hearing, taste, touch, smell. Now at least five others are added to the family: equilibrium (semicircular canals), temperature, pain, kinesthetic (striped muscle), and organic (three to five billion smooth muscle fibers in the viscera). These last two are the most pervasive in the organism and most dynamic of all in interpreting life's values and relations. They do more work aesthetically, perhaps, than all the others combined.

The analysis through the years of imagery in all grades of selections from worst to best, done by mature students in classes in aesthetics and psychology, bears ample evidence that the sources of literary appreciation are from those mechanisms that convey their messages with a feeling of intimacy, immediacy, and inwardness.

An Experimental Investigation of the Dissociation Hypothesis, Utilizing a Posthypnotic Technique. WILLIAM A. CASS, University of Oregon. (Introduced by L. F. Beck.)

A group of well-trained hypnotic subjects were required to do two complex mental operations simultaneously. One task, serial addition, was done "subconsciously" in response to a posthypnotic suggestion, while the second task, color-naming, was performed "consciously" in the post-trance period. The efficiency of these two performances was compared with the same operations done singly and simultaneously in the normal waking state.

There was considerable variation from subject to subject, but one consistent and significant trend appeared. Each subject proved to be more efficient in the simultaneous performance of a "subconscious" and a "conscious" task than in the simultaneous performance of two "conscious" tasks.

Interpretations are offered in terms of either a partial dissociation hypothesis, or a heightening of motivation due to the posthypnotic suggestions.

Apparent Personality Traits From Photographs Varied in Bodily Proportions. RAYMOND P. WALLACE, University of California. (Introduced by E. Brunswik.)

Photographs of four men taken under standard conditions were presented beside enlargements, reductions, and distortions of height and width, in paired comparison with one another and with some further figures. Altogether, 46 pairs were judged by 70 students for apparent intelligence, energy, good-lookingness, happiness, likability.

In accordance with previous findings of Brunswik based upon schematized drawings, tallness tended to elicit higher ratings, especially regarding good-lookingness and likability, broadness especially regarding energy; men tended to prefer broadness, women height. Though within our material height and width are statistically appreciable determiners of ratings—which is also in line with the very slight, but significant, objective correlation between these bodily features and certain personality variables—our results suggest that their influence is probably small in comparison

with that of other physical features such as the face and possibly some of the more specific bodily proportions.

Personality Differences in Athletes and Physical Education and Aviation Students. FRANKLIN HENRY, University of California.

A personality schedule including items from the Thurstone neurotic inventory and ascendance-submission questions was administered to student pilots, track squad athletes, physical education majors, and students enrolled in weight-lifting. In the extreme groups the physical education majors were found to be significantly lower than the weight-lifters in total scores and in the ascendance-submission and Thurstone parts separately. They were also significantly lower in trait constellations concerning social introversion, hypochondriac and neurasthenic syndromes, inferiority, hypersensitivity, and possibly in self-consciousness and self-insufficiency, but not in cycloid tendency. In the intermediate groups the athletes and aviators had nearly identical scores. They were significantly more neurasthenic than the physical education majors and less introverted and hypochondriac than the weight-lifters. The observed differences appear theoretically reasonable in terms of probable causes of enrollment in weight-lifting, selective factors, and psychological adjustment.

A Further Analysis of Hallucinations Produced by Sensory Conditioning. DOUGLAS G. ELLSON, Stanford University.

The purpose of this study was to investigate the effect of a gradual onset of the UCS upon the occurrence of hallucinations produced by sensory conditioning. Forty-nine subjects were given 30 conditioning trials with gradual onset of the UCS, and 47 subjects were given 30 trials with sudden onset. In pretests, 10 and 8 subjects in the two groups, respectively, gave one or more hallucinatory responses. In posttests following the two types of training, the number of subjects giving hallucinations was 19 and 4, indicating that gradual onset of the UCS was a critical factor without which conditioning did not take place.

A Study of Sense-Imagery Conditioning the Aims of Education of John Dewey and Rabindranath Tagore. WILLIAM E. BINGHAM, JR., University of Southern California. (Introduced by E. D. Starbuck.)

This study attempts to discover relationships between the sense-imagery contained in Dewey and Tagore writings and their educational aims.

The study seeks also to find relationships between imagery and psychogalvanic responses involved in value-judgments of Dewey and Tagore.

One hundred imagery records were obtained from random and representative sentences and from most frequently occurring words in the writings of Dewey and Tagore.

Besides imagery, psychogalvanic responses to the words were obtained from 50 persons.

Dewey writings contain a higher percentage of kinesthetic imagery than do Tagore's, while Tagore's possess a higher percentage of organic imagery.

As words were rated more and more meaningful, significant, and im-

portant, they produced larger psychogalvanic responses, increased percentages of organic imagery, and decreased percentages of visual imagery.

These differences are statistically reliable.

The imagery differences coincide, logically and psychologically, with differences in aims of education.

SYMPOSIUM ON PROJECTION TECHNIQUES

Saturday Afternoon, June 14

WARNER BROWN, Chairman

Critique of Projective Techniques. JEAN WALKER MACFARLANE, University of California.

"Projective techniques" are clinical devices used to obtain what a patient "cannot or will not" disclose easily or directly about his private world of preoccupations, feelings, attitudes, and values. They are, at their best, devices designed to tap the very *processes by which* and *patterns through which* an individual selects and organizes his experiences. They yield such important material that their mushrooming use by persons of varying clinical and therapeutic experience and insightfulness, by persons of varying degrees of appreciation of the laws basic to scientific method, and by persons with varying conceptual habits and varying terminologies makes it mandatory that stock be taken of the methodological and conceptual problems they present.

This paper reviews briefly the dangers of a lack of conceptual clarity and the use of concepts which are ambiguous and become easily reified. It urges constructs which (1) induce nonspurious ordering, (2) lead productively to verification procedures, and (3) lead to increasing accuracy in prediction.

Clinical Findings for a Constructive Remedial Therapy. DOROTHY HAZELTINE YATES, San Jose State College.

A consulting psychologist, in independent practice, needs new and better methods of psychotherapy. Evidence is presented in this study that play therapy and the psychodrama are excellent, but should be supplemented by thoroughly constructive methods with more emphasis on building character and personality; in other words, that therapy is better when essentially remedial rather than largely diagnostic. Furthermore, distinctly less psychoanalytic interpretation seems preferable in the United States. Particularly, Freudian psychoanalysis, both in theory and application, appears to be unsuited to the American way of life. With the group of children studied it was found better to use techniques of unusually successful American mothers. Some of these techniques, and their underlying aims, are discussed. The material does not at present lend itself to experimental verification.

A Further Report on the Incorporation of Therapeutic Procedures as Part of the Educative Process. DOROTHY W. BARUCH, Broadoaks School of Education, Whittier College.

Therapeutic procedures have been incorporated in five different ways in the laboratory school at Broadoaks: (1) for the entire group through

provision of general release and of normal affectional contacts; (2) for particular children through more than usual affectional, supporting contact within the group situation; (3) for particular children through opportunities for deeper individual, affectional contact away from the group in so-called "time-alone" with a teacher; (4) for particular children through provision of more than usual opportunities for release within the group situation; (5) for particular children through opportunities for greater release away from the group in "times alone."

Examples of each of these ways will be presented and a case study given showing how these therapeutic procedures fit into the total picture and what effect they appear to have in case movement. Discussion will be included as to the reasons why such procedures appear to be helpful to these children. Wider social implications will be drawn, and possible suggestions will be given for incorporating release procedures into the ordinary school situation.

Direct Treatment of Behavior and Personality Problems of Childhood. JOSEPH C. SOLOMON, Mount Zion Hospital, San Francisco.

In treating children who present emotional disturbances, results are best obtained when the therapeutic plan consists of approaching the problem from multiple directions. After eliminating organic factors, the psychotherapeutics should be applied, not only directly to the child, but also indirectly to him through the medium of work with the parents, use of recreational and other socializing activities, change of school or classroom, or placement in a boarding school, camp, institution, or foster home. This paper remains confined to the direct therapeutic work with the child.

A few of the basic concepts of personality formation are discussed, particularly as they relate themselves to the therapeutic goals. A brief exposition of methodologies is offered, particularly emphasizing active play therapy as employed by the author at the Mount Zion Hospital.

The description of therapy is considered from two dimensions, namely: (a) the actual contents of the interviews and (b) the relationship between the patient and the therapist.

Theories Regarding the Revelation of Constitution and Character Through the Voice. PAUL J. MOSES, Stanford Medical School.

The aim of these experiments is to prove that by using a voice record without any other clue we are able to conclude from it character and constitution. Twenty-four basic symptoms are explained. The arrangement of these symptoms around the so-called "Dominant" is demonstrated. The expression of urges and impulses in voice and speech is especially stressed as well as the phonetic manifestation of different constitutional types (Kretschmer, Sheldon, etc.). The use of experimental phonetics in psychiatric differential-diagnosis is demonstrated by phonograph records.

Some Aspects of Language as Significant of Personality. WILMA LLOYD, University of California. (Introduced by Jean Macfarlane.)

What a person talks about and how he talks about it are noted as important indices in clinical diagnosis. His style of speaking and writing

seems to be an unwitting expression of patterned tendencies toward action. Selection of content is influenced by present and past circumstances. How he organizes that content, the emphasis and value given its salient details, and the linguistic form used to convey the significance of the content for him are peculiarly his own. Through evaluation of these factors we may determine ways of verbal manipulation that bear striking resemblance to other ways of behaving. Analyzing the formal 'logic' of his language structure is not enough; further differentiation within these relationships will reveal the individual's scheme of values that give insight into the dynamics of his conduct.

The Place of Psychodrama in Training the Clinician. FRANCES C. MERCHANT, Stanford University. (Introduced by Maud A. Merrill.)

One of the basic pedagogic problems in training the student clinician has been the difficulty of observing the student in action in order to evaluate his capability in playing the role of clinician. The psychodramatized clinical session gives an opportunity to train the student in the handling of various types of patients, without the danger of having an actual patient mishandled; and, in addition, it allows for a dynamic evaluation of the student's readiness for clinical therapy—an examination that has more practical value than the more common type of written test.

Further Explorations in Play Construction: Three Spatial Variables in Their Relation to Sex and Anxiety. ERIK HOMBURGER ERIKSON, University of California.

Personological methods originating in psychopathological work tend to become sophisticated and general before their specific variables and their "natural" foci are established.

This paper discusses some results of an investigation into the occurrence and meaning of certain spatial metaphors (previously deciphered in isolated clinical cases) in the play constructions of 150 representative 11-year-old children of both sexes. The subjects were asked to use blocks and toys for the construction of an "exciting scene out of an imaginary moving picture." Simple variables (such as up and down, backward and forward, open and closed) are illustrated by slides. Variations most clearly corresponding to differences in psychosexual status and in maturity are described and their meaning for personology discussed. The attempt is made to define what can be expected of the method described.

The Rorschach Method. M. CLAIRE MYERS, University of California.

Many claims have been made for the Rorschach method. The majority of these claims are as yet unverified.

The administration and formal scoring are standardized. Reliabilities of the formal scoring categories may be considered satisfactory, since they range from .70 to .96.

The Rorschach cannot be used to predict intelligence. The correlation between IQ's and estimates of intelligence based on the Rorschach is positive, but low (.30).

Certain personality variables can be estimated satisfactorily through the use of the Rorschach. Correlations and critical ratios are presented. Cases of serious maladjustment can be picked out, and in some of these the causes can also be determined. Minor areas of maladjustment as well as good adjustment can be selected in some cases. About 10% of the cases give sterile records which are noninterpretable.

The best interpretations are based on a combination of formal scores and content. As yet the treatment of the content is unquantified, and further work is necessary.

Some Quantitative Results From the Analysis of Children's Stories. R. NEVITT SANFORD, University of California.

Stories told by 52 children, aged 5 to 15, in response to a series of pictures (Thematic Apperception Test) were analyzed according to Murray's scheme of Needs. Scores on the various needs, *i.e.* categories of action pattern, are considered in relation to age, sex, and manifest behavior. Correlations and graphs are presented.

The Reputation Test as a Projective Technique. READ TUDDENHAM, University of California.

The Reputation Test yields data of two sorts: first, a child's reputation in the eyes of his classmates and, second, an indication of the characteristics which he attributes to others and to himself. Findings of the latter type may be considered projections of the child's personality.

Individual interpretation is based on the pattern of the child's votes on the various items of the test, *i.e.* sections omitted or sections on which voting is heaviest, self-mentions, agreement with other judges, etc. Validating information is supplied by the same test in the form of personality evaluations of the subject by other children and by the teacher.

Disadvantages are that this method can be given only to groups and that it is limited as to the areas of personality diagnosis to which it is adapted.

Individual case records are discussed.

The "Warming-Up" Process as a Personality Variable. SAMUEL D. MORTFORD, Stanford University.

Moreno has described "warming-up" as the entire process by which the subject attains the full status of the role assigned by the director in the psychodramatic session. The mental and physical methods characteristically used by the subject and the length of time required are viewed as basically determined by the underlying personality structure. The present paper deals with the implications of this process in activity outside the psychodramatic theater, its meaning in interpersonal adjustment, and its relationship to various other theories of personality.

BOOK REVIEWS

SHELDON, W. H., with the collaboration of S. S. Stevens & W. B. Tucker.

The varieties of human physique: an introduction to constitutional psychology. New York & London: Harper, 1940. Pp. xii + 347.

The central problem of constitutional psychology is described as the "study of the psychological aspects of human behavior as they are related to the morphology and physiology of the body" (p. 1). There is probably no field of psychological inquiry which has a longer history or wider ramifications. From the speculations of the earliest clinicians to the correlation tables and anthropometric devices of recent investigators, this aspect of the mind-body problem has retained its' fascination. Among professional psychologists and psychiatrists the well-known theory of Kretschmer has probably aroused the greatest interest, although the initial enthusiasm with which his classification was greeted has in many instances been replaced by increasing skepticism and even disillusionment.

Sheldon and his colleagues now propose a new scheme for the description of individual differences in morphology. There are three primary aspects or components of bodily constitution. The first component, or *endomorphy*, means relative predominance of soft roundness through the various regions of the body, with massive digestive viscera. The second component, or *mesomorphy*, means relative predominance of muscle, bone, and connective tissue. The third component, or *ectomorphy*, means relative predominance of linearity and fragility, with a large surface area and also a large brain and central nervous system, in proportion to total mass.

At first glance this scheme is not unlike that of Kretschmer. The endomorph appears to be the pyknic under another name, the mesomorph is the athletic, and the ectomorph the leptosome or asthenic. Sheldon is not content, however, to diagnose any individual as belonging in one or another of these three categories. Instead, he describes each individual somatotype in terms of the relationship between the three components. On the basis of his examination of 4000 men of college age, he assigns a numeral of 1 to 7 to indicate the amount of each component present. Each subject is designated by three numerals; for example, a 711 is at the upper extreme for endomorphy and has the minimum of the other two components; a 444 is at the midpoint on all three components; and so on. There is a mathematical possibility of 343 somatotypes, but so far only 76 have been distinguished. The scheme may seem somewhat artificial, but it does make possible a much more precise shorthand description of each individual than is permitted under Kretschmer's threefold classification and, in that respect at least, represents a definite advance.

There is no space for a detailed description of the method of diagnosis, and the interested reader is referred to the original study. Outstanding aspects which may be mentioned are the standardized photographs from which the actual measurements are made, check-lists of inspectional cri-

teria, the division of the body into five regions in order to study dysplasias or inconsistencies within the organism, the variety of measurements and indices, the somatotyping "machine" which serves as an aid in diagnosis, the attention to secondary variations such as gynandromorphy, "texture," and hirsutism, as well as the careful descriptions of the individual somatotypes. This is undoubtedly the most complete and thorough account of "the varieties of human physique" at present available.

Our main concern is, however, with constitutional *psychology*, and to this we are given merely an introduction in the last chapter. It is indicated that there are three basic temperamental components which are correlated, though not perfectly, with the components of physique. The first of these is *viscerotonia*, roughly identifiable with love of comfort, relaxation, sociability, conviviality, and sometimes with gluttony, and correlated with endomorphy. The second is *somatotonia*, dominated by the will to exertion, exercise, and vigorous self-expression, and correlated with mesomorphy. The third is *cerebrotonia*, in which the sensory and central nervous systems play dominant roles, with a tendency toward symbolic expression rather than direct action, and correlated with ectomorphy. The data on which this relationship is based are not presented, but are promised in a subsequent volume.

This last chapter touches on such a wide variety of problems as to acquire almost a cosmic character. In addition to the relationship between morphology and temperament, the questions discussed include the permanence of the somatotypes, constitutional weight standards, the influence of heredity and the relationship to differential fertility and eugenics, the influence of endocrine function, the relation to mental and to physical disease, the problem of differential food needs as well as of differential dress and furniture, the relation to sexuality and mating, to crime and delinquency, and to education. It seems clear that the adoption of a constitutional viewpoint would lead to a veritable revolution in our institutions and interpersonal relations. The evidence presented is so sparse, however, at least in this volume, that most of us will probably prefer to wait a while before joining in a revolution of such scope. Sheldon and his colleagues have written a stimulating and provocative volume, and one which should lead to a great deal of interesting and fruitful research. Their emphasis on morphology seems, however, in spite of their own reservations, to be somewhat extreme in the light of the accumulated material on the social determinants of temperamental and allied variables. Perhaps the next volume will be more convincing. This reviewer, for one, awaits it with impatience.

OTTO KLINEBERG.

Columbia University.

BROWN, J. F., with the collaboration of K. A. Menninger. *The psychodynamics of abnormal behavior.* New York & London: McGraw-Hill, 1940. Pp. xvi + 484.

This textbook of Abnormal Psychology is essentially a systematic treatise of Freudian psychodynamic psychology, presented from the organismic viewpoint. Field theory replaces class theory. Mere description

and symptomatology are subordinated to psychological etiology, the etiology of the Psychoanalytic School. Its position with respect to the mind-body relation is that "every sample of human behavior, normal or abnormal, presents both a physiological (or organic medical) and a psychological (or psychiatric) problem."

Structurally the book is divided into five distinct, but closely related, parts. Part I, "The Organismic Viewpoint," is devoted to systematic and historical orientation. Abnormal phenomena are regarded as exaggerations or perversions subject to the same laws as normal mental phenomena. Personality is defined as "the pattern of personality traits which gives the individual his individuality"; it "has its genesis in the way in which individuals of specific biological constitution meet barriers in the psychological field." The systematic position is given orientation by an excellently organized chapter on "The Historical Development of Psychopathology" and a chapter outlining and evaluating other treatments of the mind-body problem.

Part II is devoted to "Symptomatology." This part—only 65 pages—is briefer than in most textbooks since, as the author points out, the book is devoted primarily to psychodynamics and is concerned with symptoms only as an index of a sick personality. Every symptom is regarded as having a cause, a meaning, and an economy. Despite the brevity of this part, it is beautifully organized; a wealth of material, stripped of its usual padding, is condensed without sacrifice of integration into a minimum of pages.

Part III, "Theory of the Structure and Genesis of the Personality," is devoted to a presentation of psychoanalytic theory. This presentation, comprising 121 pages, is up-to-date, comprehensive, and unusually well integrated. Here the author has cut through much of the mysticism which commonly obfuscates psychoanalytic theory and has succeeded in presenting the essentials in a most comprehensible fashion. The reviewer knows of no other source in which such a wealth of psychoanalytic concept is as completely digested in so few pages.

Part IV, entitled "Psychiatry," comprises 154 pages, and is devoted to a consideration of the various mental disorders. It comprises the following chapters: "Psychiatry as a Branch of Medicine," "The Psychoses Primarily Organic in Origin," "The Psychoses Primarily Functional in Origin," "The Borderline Diseases," "The Psychoneuroses," "Abnormalities of Sexual Behavior," "Character Disorders," and "Genius." The psychoses and the borderline diseases are each treated under the following headings: (1) "Name of the Disease and the History of Its Differentiation"; (2) "Incidence"; (3) "Symptomatology"; (4) "Differential Diagnosis"; (5) "Etiology"; (6) "Therapy." The psychoneuroses are treated under the headings of "Symptomatology" and "Etiology." The psychological etiology, of course, is envisaged from the psychoanalytic viewpoint.

Part V, "The Future of Psychodynamic Theory," consists of one chapter, "Toward an Experimental Psychopathology." Here various experimental approaches are reviewed; of these the topological is regarded as the most promising. The author predicts that experimental psycho-

pathology will advance with the development of the hypothetico-deductive method and the further utilization of field-theoretical concepts.

In many respects the book is outstanding. The author has rendered an invaluable service in wading through a vast amount of disjointed, esoteric literature and sifting therefrom the core of the psychoanalytic doctrine. This core, which includes all the essentials, he has presented in a faithful and yet easily comprehensible manner. He has given it psychological rather than medical or mystical orientation. The book absorbs the interest throughout and conveys the impression of extreme thoroughness. It contains a bibliography of 438 titles, as well as pertinent bibliographical notes at the end of each chapter.

As a textbook of Abnormal Psychology, however, this volume has certain limitations. Emphasis on psychodynamics and psychoanalytic theory has resulted in the exclusion of much material ordinarily covered in courses in Abnormal Psychology. Mental deficiency, hypnosis, and sleep receive but slight treatment; and spiritualism, telepathy, and clairvoyance are completely neglected. The reviewer feels that many of the psychoanalytic concepts are presented in too much detail for the average student and that the student is likely to emerge with a one-sided notion of what Abnormal Psychology is about.

This volume will serve admirably as a textbook in psychoanalytically oriented courses in Abnormal Psychology and will constitute an invaluable reference book in all Abnormal Psychology courses.

WALTER C. SHIPLEY.

Hartford Retreat.

WOODWORTH, R. S. *Psychology.* (4th ed.) New York: Holt, 1940.
Pp. xiii + 639.

It seems somewhat anticlimactic to review a book which had so many adoptions that an ambitious edition was exhausted before the end of September, 1940. Professor Woodworth's books have usually had a facility for sweeping the market, and they are solid, scholarly texts.

In the opinion of the reviewer, the individual instructor's judgment as to the utility of this book will depend upon whether his course is aimed directly at the student taking it or is intended as an introduction to the science of psychology. For courses where immediate profit for the student is important, this book probably will not be desirable—applications are not often pointed out and a special "personal-applications" chapter does not contain much usable material. Some of the examples from the field of sports, etc. sound very academic and unworldly, and the chapter on personality is not very appealing. Furthermore, the book is quite heavily loaded with anatomical and physiological material, as well as some technical material in statistics. On the other hand, the attention this book has been accorded indicates that courses intended mainly to fit the student for advanced work in the science of psychology are still numerous, and for a course of this kind this book should serve admirably. Even the technical sections are written understandably, and in general the writing is sensible, logical, and clear.

The inconsistencies which plague writers of beginning texts crop up

here as always. An operational definition of intelligence (p. 102) is utilized, but operationism as such receives scant attention elsewhere in the book. On page 136 personality is an adverb and on page 139 it is structure; this type of shift in language usage occurs in connection with several concepts (*e.g.* intelligence, abilities), although the writer, because of his systematic viewpoint, emphasizes the necessity for the use of adverbs. On page 427 anger is without doubt an organic state; on pages 435-437 it is "not an essential part or factor in the emotion of anger."

There are a few sections of the book which are likely to be unclear or very difficult for the elementary student. Illustrative are: the distinction between objective and subjective data (pp. 15-18, particularly p. 17); the distinction between spontaneous and forced activity (pp. 27-28)—which possibly could have been treated as a matter of definition, and briefly so; the discussion of a "correlational" definition of intelligence (p. 102); the definition of an instinct in terms of its primitiveness and as a permanent trend in behavior (pp. 375-376); and the section on organic sensations (p. 505), which is so brief as to be uninformative.

Professor Woodworth doubts that psychology is a deductive science (p. 20), thus neglecting the possibilities in the work of the current Yale group. There seems to be undue optimism about the definition and measurement of persistence (p. 153). A rather long list of unlearned motives ("formerly called instincts") begins on page 373. Several of these are still described in McDougallian fashion. There is a good deal of reification in this connection, and the author tends to disregard the ethnological and other types of evidence concerning motivation presented, *e.g.* by Klineberg in his *Social psychology*. The description of memory traces (p. 346) seems overly literal—for example, the statement is made that "for a few minutes after a trace is formed, it is young and tender and easily disturbed." Statements about binocular color mixture (p. 487) are not related to theories of color vision and are left in a rather isolated condition. The last chapter of the book, on personal applications, is overly loaded with abnormal psychology. Perhaps the title is Professor Woodworth's bow to current demands for practical application and, had the chapter been written a decade ago, it would simply have been called "abnormal psychology." At any rate, it is in this connection that the book signally fails. Special compartments or chapters on personal applications do not make for effective pedagogy. Psychological facts which are of personal value should be interpreted and emphasized with their value in mind, wherever they occur.

Three digressions seem to the reviewer to be unnecessary for the elementary student: the discussion of atomism (p. 39), technical problems in interpreting the IQ (pp. 115-117), and the discussion of multiple personality (pp. 163-164). Two minor errors are: the labeling of Fig. 3 (p. 29) as "set" rather than "release"; the giving of an incorrect reference number for the source of Fig. 55 (p. 295).

With respect to the job of manufacture: the binding is attractive, the pages are larger than in the 1934 edition, and the type larger and more readable. Other changes from the 1934 edition include the addition of some new photographs, improved graphs, a color-sample sheet inside the

front cover, recombination of some of the subject matter, and considerable rewriting of previous chapters. There is no regular format for tables, which perhaps serves to fit their content into the text, rather than isolating it. The inserted page references are helpful for purposes of backtracking, and there are liberal reference lists at the end of each chapter. The indices are excellent, and typographical errors are at a minimum.

CLAUDE E. BUXTON.

Northwestern University.

CATTELL, R. B. *General psychology*. Cambridge: Sci-Art, 1941. Pp. 624.

In a short Foreword to the Instructor, the author of this textbook states that he has "left much to be done by the instructor, particularly in examining according to his own emphasis, in expanding the course in technical fields, and of directing the students' further reading." Lists of references have been omitted in favor of suggestions for further reading. "To fit in with the natural teaching units in a course and to avoid the fatigue of long chapters, the book has been divided into twenty-six short chapters, grouped together in broader units in a manner indicated by the chapter titles." The title of Chapter I, "The Scientific Study of What People Think and Feel and Do," is the definition of psychology accepted in the text. Although the author states that the techniques for studying the first two divisions of subject matter in the definition are incomplete, he fails to give a clear or complete description of the techniques used in studying what people do. Moreover, although psychology is described as a science, there is no attempt to give the student an idea of what is characteristic of experiments in psychology.

Chapters II, III, and IV, which are concerned with the general topic of "The Abilities of Man," include a clear and concise description of the development of intelligence testing. The concept of intelligence admits the existence of group factors in addition to G and S's. The present status of knowledge concerning intelligence is summed up in the following: "Psychology has done much to map the fields in which G is manifested; but at present it knows little about the nature and extent of the group factors and practically nothing about the special S's, except that they are almost as numerous as the stars." Tests of other abilities and aptitudes are ignored completely in this section, and little space is devoted to the methods or logic of test construction.

Chapters V, VI, and VII form a section on "The Motives of Men," which is a synthesis of McDougall and Freud, leading up to a presentation of the author's system of "Ergs." Both extremes of viewpoint pro and con with respect to instincts are avoided. The physiological and experimental approaches to motivation are superficially examined, while considerable space is given to the clinical.

Chapters VIII, IX, and X deal with the modification of primary motives and the social development of personality and character. The reflexological explanation of the development of motives is rejected primarily because "all the true conditioned reflexes studied in laboratories seem to lack permanence unless continually reinforced, whereas the modifications of ergic behavior with which we deal in everyday life are relatively

permanent." "The modification of ergs is precisely analogous to, but not the same as, that of reflexes." In addition to modification through learning, the innate drives (ergs) are modified through the blending of several ergs to produce sentiments or attitudes. "The analysis of sentiments and their accompanying secondary emotions into their constituent ergs is usually not difficult, either on the basis of introspection or of goal-seeking behavior. Thus, scorn is a combination of disgust and anger as loathing is of disgust and fear. . . . In admiration we have a blend of wonder (from the erg of curiosity) and negative self-feeling (self-abasement erg)." The establishment of sentiments may occur in three ways: (1) "By a process akin to conditioning." (2) "By suggestion and imitation from older people and the herd." (3) "Smaller sentiments and attitudes are often acquired as necessary adjuncts to larger ones." This necessity may be the result of logical reasoning, rationalization, or the reaction formations of the psychoanalyst. The structure of character and personality is described in some detail. The discussion of personality measurement is concerned almost entirely with interests and attitudes. Here again there is a dearth of material on test construction and a lack of critical evaluation of the tests used. For example, first among the methods of measuring interest is listed the psychogalvanic reflex, the use of which in this connection "depends on the fact that it is a measure of conation."

Chapters XI, XII, and XIII have to do with "The Relation of Body and Mind." After three short paragraphs leading up to the statement that science "is inclined to speak of a unity—body-mind—a single organic whole which cannot be understood on one plane without being known on the other," the author gives a standard treatment of bodily changes in emotion, endocrine functions, and functions of the nervous system. Throughout this section there is a laudable emphasis on function rather than on anatomy.

Chapter XIV deals with "Temperament and Types of Constitution." The content of the chapter is suggested by the following: "We have reviewed the field of typology, in which psychologists, physicians, and anthropologists have been all too prolific. Some half dozen type descriptions seem to be of practical and theoretical interest today: endocrine patterns, surgency-desurgency, general emotionality, schizothyme-cyclothyme, perseverative and non-perseverative, T and B types and possibly racial types."

Chapter XV, "The Interaction of Heredity and Environment," includes an excellent presentation of the biological basis of heredity, which describes those fundamental principles essential to the elementary student's understanding of the psychological problems involved without presenting such a conglomeration of genetic theory as to confuse him. The author accepts, apparently uncritically, the conclusion of Burks "that 80% of intelligence variation in the general population is due to heredity and 20% to environment." He states later, without attempting to substantiate it, the conclusion that, "omitting the gross effects due to destruction of the nervous system, it seems likely that in man 90% of variation in intelligence is due to heredity and 10% to environment." In summarizing the effects of heredity, the author concludes that "surveying the

various truncated and sporadic researches scattered over this field one may best summarize by saying that intelligence is largely inherited, temperament is half and half the property of heredity, and character is largely a matter of environment." Doubtless there are many who will not agree with such a statement. Regardless of the truth or falsity of the conclusion, however, it appears to the reviewer to be premature, to say the least.

Learning, memory, and forgetting are treated in Chapters XVI, XVII, and XVIII. Learning is defined as "the acquisition of any kind of modification of behavior," which is anything but a rigorous definition. The phenomenon of the superiority of spaced over massed practice "has been shown not to be due to fatigue effects alone or even predominantly." Thirteen pages later the reader ceases to wonder what other factors are responsible when he encounters the following: "Learning is a process which goes on, with consolidation and assimilation, after we have finished with conscious activity. The same conclusion follows from the common observation that concussion, or injury to the head, results in loss of memory for incidents several minutes or even hours before the accident. The relative success of whole as against part learning and spaced as against unspaced also indicates a persistence of activity, linking up, ordering and tidying impressions, when we consciously think we have finished with them." Reminiscence, as found by Ballard (no other research on this is mentioned), is considered briefly as being "due to incubation or consolidation." Retroactive inhibition, treated in three short paragraphs, is attributed to interference with the process of consolidation. It is an "unfortunate omission" that the hypothesis that retroactive inhibition is proportional to the amount of G in each activity has not been investigated, "since an analysis of this kind could be designed also to throw light on the question as to whether the G hypothesis or Thomson's "sampling theory" best fits the facts. Laws of learning, retention, and recall are given in purposive terms.

Chapters XIX, XX, and XXI constitute a section on "The Mind at Work," in which is included work phenomena, thought and imagination, and perception and sensory phenomena. The author expresses an unwillingness to reject the term "fatigue" in favor of the more objective "work decrement." In spite of this he believes that "the general dimension of fatigue, considered as reduced capacity to function, is worth retaining." The general viewpoint with respect to work phenomena is illustrated by the following: "It would seem that so long as the will is able to act at all, the consequences of fatigue can be largely overcome." "In work and fatigue, as in learning, we must invoke in the end the concept of purpose. There is no fatigue as long as purpose itself is not fatigued." The chapter on thought and imagination represents a thoroughly mentalistic approach to the problem. "Thought is essentially problem solving on an imaginal level." However, "thinking by reliving in imagery is a primitive mode of thought from which other kinds are derived by gradual suppression and fusion." The role of the nervous system in thinking is ignored, and the part which muscular reactions play is dismissed by casual reference to Bain, Watson, and Thorson. Perception is considered more or less traditionally, the treatment admitting the configural phenomena of

Gestalt psychology, but denying the superstructure of theory erected by the Gestaltists. Attention is treated primarily in terms of objective determinants. The motor aspects of attention are considered only in the following statement: "Maintaining any perception in the full focus of attention is a conative activity, showing most of the bodily signs of effort, such as muscle tension, arrest or inhibition of breathing, psychogalvanic reflex phenomena, etc., and it is therefore not surprising that it should manifest recreational fluctuations such as we find in all work curves." The treatment of the sense organs and sensory phenomena is very brief and, in the case of kinesthesia, incomplete.

Chapters XXII to XXV, inclusive, constitute a survey of the applications of psychology to psychotherapy; industry, commerce, and vocational guidance; education; and social and political problems. To the reviewer this section appears to be the best part of the book. In the short space of 113 pages the author has succeeded in presenting a comprehensive and nontheoretical treatment of the field of applied psychology.

The last chapter is an appendix, entitled "The Use of Statistics in Psychology." Placing the technical statistics at the end of the book is a commendable procedure, since it avoids encumbering the body of the text with material which is irrelevant to some courses in General Psychology. Here, however, the author has attempted to squeeze into 21 pages a treatment of frequency distributions, central tendency, dispersion, correlation, regression lines, factor analysis, and sampling errors. Consequently, in courses where statistics might be used this section is so superficial as to be of little value.

In general, the text is interestingly written in a clear and readable style. The clarity of style is impaired, however, by the author's failure to explain or to refer to many of the figures. All of the half-tones are poorly reproduced, and many of the line cuts are poorly composed. In one instance reference is made to a figure which does not appear (p. 376). The absence of emphasis on the experimental approach to the study of psychological phenomena results in a textbook entirely unsuited for courses in which General Psychology is taught as an experimental science. Furthermore, the work is likely to have limited value as a textbook because of the esoteric motivational system espoused and because of the glaring inadequacy of its treatment of learning, thought, and motor phenomena. It is apparent that the author either is unfamiliar with the modern and contemporary research in these fields or considers this research to be unimportant.

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University of Missouri.

ZIPF, G. K. National unity and disunity: the nation as a bio-social organism. Bloomington, Ind.: Principia Press, 1941. Pp. xix + 408.

Appearing on the eve of the passage of the Lease-Lend Bill this book is certain to arouse both interest and controversy. The dust cover states: "Even as the headlines are crying for national unity, Dr. Zipf presents the results of years of original research into the more profound economic, sociological, and psychological aspects of this topic." The preface and in-

introduction will further arouse great expectations in the social scientist. Zipf starts his book by stating:

Some time ago it occurred to the author that we might learn much about our various social, economic and political problems if, instead of viewing man as "God's noblest creation," we studied human group-behavior with the same ruthless objectivity with which a biologist might study the organized activity of an ant hill, or of a bee-hive, or of a colony of termites. . . . And with this thought in mind, the author began an investigation which thanks to the help and encouragement of friends, prospered rapidly, as the firm outlines of some very precise and yet bafflingly simple social laws emerged ever more clearly from the accumulating data.

We are thus assured the study will be objective. It will be based on a hypothetico-deductive method.

Our entire analysis, therefore, will consist of the factual and interpretative; that is (1) the observation, classification and measurement of phenomena on the one hand, and (2) the comparison of sets of data and the construction of working hypotheses to be tested, together with a considerable amount of factual discussion.

It will be field-theoretical in nature and will introduce psychological considerations into economics.

We shall find reasons for believing that the behavior of the individual member of a social group is governed to a considerable extent by the laws of the social group of which he is a member, and that the terms "individual" and "social" represent but two different points of view of one integrated field of organized activity. For the want of a better term, we shall name the principles of this organized group-activity, as disclosed from our two points of view, the principles of "social-economics."

As the reviewer has often maintained, all of these points are methodologically sound. They represent the directions social science must surely take as it becomes systematic. Let us see how far these great expectations are fulfilled.

Zipf's chief argument is based on a series of statistical findings concerning distributions, first of populations over terrains, then of incomes to various members of populations, of word frequencies in spoken and written languages, and finally of tools in an idealized economic workshop. We are safe in assuming that these statistics are on the whole reliable and valid, as Zipf carefully discusses both aspects of his data and forestalls many criticisms. What Zipf finds is that such distributions may very frequently be described numerically in terms of harmonic series. Thus, if one ranks the populations of American cities and multiplies each rank by the number of inhabitants, the result is constant. The second city is one-half the size of the first, the third is one-third the size of the first, and so on. The other data reported all follow such harmonic series operated on by certain constants. Although the mathematics are very simple, Zipf has had them checked by professional mathematicians. He reports his results on logarithmic graphs so that the harmonic series comes out as a straight

line with a constant slope of one. Such a straight line represents a saturated and homogeneous set of data and is indicative of a society (population or economic income distribution) in equilibrium. In those cases where there is curvature Zipf argues that the society is disequilibrated and that social and economic changes may be expected. Actually, curvature is found at various critical historical times. (The period before the Civil War in the U. S. A., after the Versailles Treaty in Central Europe, around 1929 in the U. S. A. are examples.) This broad collection of data from the most varied countries and times is very impressive, and the correlation between inhomogeneity of data and upsets of socioeconomic equilibrium is undoubtedly positive. No critic will be able to raise the cry that this is meaningless counting.

Homogeneous distributions are accounted for by supposing that nations behave as bio-social organisms and that in the specialization of labor and the exchange of materials a variant of the principle of least action is involved. This hypothesis is neatly worked out with reference to the data. The second half of the book is concerned with the analysis of actual world conditions, both international and intranational. Although Zipf takes great pains to be objective and scientific, he does not attempt to shirk the implications of his data and his thesis as he sees them. Undoubtedly some critics will call this book unadulterated Nazi propaganda. But in so doing they will argue from the heart rather than from the mind. So far as the reviewer can see, the data are not cooked, nor are the implications fanciful, on the assumptions made by the author.

To a book of this sort, at this time, the reviewer reacts with a series of doubts rather than with a set of definite criticisms. He questions, although he may be quite wrong, the final sociodynamic significance of the type of data Zipf has collected. These are data rather than constructs and, despite the plausible tone of the analysis in terms of least action, economy concepts are at the best good working hypothesis. Besides socioeconomic least-action there is emotional least-action. Zipf speaks constantly of psychological economics and sociological dynamics. But his chief arguments are little tempered by either. Thus he argues—and here the reviewer is most sympathetic—that we must consider the “psychological man” as well as the “economic man” in accounting for Hitler’s rise to power and his successes of the last years. And he implies that Hitler will probably dominate continental Europe. But the British are “psychological men” too, and the Americans are daily becoming more “psychological” and less determined in their interests by rational economics. It is not impossible that the British will win the war and impose a peace which will make Versailles look just and fair. This would create even greater disequilibration in international affairs from Zipf’s standpoint. In other words nature’s balance is continually upset by man’s often irrational psychology. In brief, although the reviewer admires Zipf’s methodological position and sympathizes with his ambitiousness, he has some doubts about the finality of such simple solutions. When Zipf points out at the end of his book that the distribution of chemical elements in protein molecules also follows the harmonic series and attributes this to the same preference of “Nature” which leads to income and population distributions, the reviewer is frank-

ly baffled. This sounds too much like "the music of the spheres" and smacks of Pythagoras rather than Galileo.

In the compass of a brief review it is impossible to describe all the various findings, to cover all the stimulating implications, and adequately to criticize the minor shortcomings of this most provocative book. It is likewise impossible to do more than mention Zipf's excellent prose style, his dry humor, and his wide scholarship. This is an ambitious and an important work. The final validity of the arguments (as the author himself admits) awaits both further evidence and the course of history. In the meantime this book should go on the required reading list of every serious student of social phenomena.

J. F. BROWN.

University of Kansas.

BRYANT, M. M., & AIKEN, J. R. *Psychology of English*. New York: Columbia Univ. Press, 1940. Pp. 229.

The thesis of this book will be warmly approved by most psychologists interested in the field of verbal behavior. It is that "English language and grammar are the products of the group thinking of billions of people whose minds have worked psychologically rather than logically; and the fruit of this group thinking is a system which reflects behavioristic patterns rather than formal regularity." The book is said to be "to a considerable extent, a book against logic"; but a more accurate statement, perhaps, is that it is designed to show how grammar and syntax are influenced by psychological processes which are not usually recognized or encompassed by formal logical systems. An antilogical approach to linguistic problems is by no means new (indeed, as the authors point out, it is characteristic of the modern trend), but it is here sustained with much interesting and pertinent material.

The support of the thesis is attempted by classifying instances of speech which exemplify modern English usage under a number of psychological chapter headings. The instances are chosen for reasons which suggest that the authors have not completely thrown off traditional linguistic preoccupation. Many of them exemplify historical changes, many are merely curious deviates from a (logical?) norm, many present interesting puzzles in the construction of sentences, and so on. The headings under which they are grouped are apparently offered as explanatory principles. For example, a chapter entitled "Arrogance" discusses the fortunes of the word *welsh*—how it was first applied by invading Teutons to their Celtic victims, how it came to mean *stranger*, *foreigner*, or *servant*, and how during a later period of bad feeling between the Welsh and the English it supplied a verb meaning "to cheat" or "to avoid an obligation." Similarly, a chapter on "Sloth and Slovenliness" lists solecisms like *mitigate* for *militate*, popular etymologies like *penthouse* for *appentis*, and numerous examples of phonetic short cuts.

A complete list of these principles will indicate the psychological status of the book. There are chapter headings containing the following more or less psychological terms: *consistency*, *inconsistency*, *tendency to change*, *expedition*, *impatience*, *anticipation*, *long-cutting*, *imagination*, *striving for*

beauty, humdrum, escape, arrogance, desire to impress, modesty, politeness, abbreviation, emphatic frankness, confusion, profundity, sloth, slovenliness, indecisiveness, time. The list gives a fair indication of the sort of analysis attempted. It is not very satisfying from the point of view of the psychologist, because it does not go beyond the vocabulary of the layman and because it makes no attempt to elucidate the actual psychological processes by virtue of which the principles affect speech. The authors would perhaps be among the first to assert that much remains to be done at this point, but a certain lack of clarity in the conclusions might have been avoided by an explicit statement. Are we to understand that the semantic change in *welsh* is merely an example of "arrogance," or is there some causal relationship between the arrogance of the speaker and the change in the meaning of the word, so that, knowing the one, we might have predicted the other? If the latter question is answered affirmatively, what is the mechanism involved?

Since the authors make no attempt to answer questions of this sort, it is scarcely fair to criticize them on such grounds. They have undertaken to provide material reflecting the operation of psychological principles, and their contribution in this direction sufficiently justifies their work. Even though the actual behavioral mechanisms remain untouched, they show beyond any reasonable doubt that the English language reflects many aspects of human behavior which lie outside logical systems.

The book presupposes no special linguistic knowledge. Its few technical terms will be familiar to the grammar school student, and its psychological terms are almost as elementary. Since little or nothing would be gained by a more technical vocabulary at this level of analysis, the authors appear to have made a wise choice of terms. The many interesting and often amusing examples will recommend the book, not only to the psychologist, but to the layman who is interested in problems of verbal behavior.

B. F. SKINNER.

University of Minnesota.

PATERSON, D. G., & TINKER, M. A. *How to make type readable: a manual for typographers, printers and advertisers* (based on twelve years of research involving speed of reading tests given to 33,031 persons). New York: Harper, 1940. Pp. xix + 209.

To those who have read the numerous articles by the authors in the *Journal of Applied Psychology* during the past twelve years the greater part of the book will be familiar. However, there is some new material, and it is convenient to have the studies gathered into one volume. The book is not, however, directed primarily to the psychologist, but rather to the printer. The subtitle indicates that it is a "manual for typographers, printers and advertisers." The experimental basis centers around the familiar Chapman-Cook Speed of Reading Test, presented in two forms differing in typography. Brief paragraphs contain one "wrong" word which the subject must locate as quickly as possible. Readability in this sense is defined by the authors as equivalent to legibility. Ten variables are investigated by this technique.

The first chapter indicates the importance of the problem in the modern era with typography "streamlined" in order to keep up with our tempo. The authors minimize experiments made with single letters, inasmuch as we read words and sentences. They also wisely discount earlier experiments on speed of reading in which no check was made on whether the subject understood what he read. Variables such as illumination and visual defects were not evaluated, since the comparison was always between two forms of the test given to the same subject under the same conditions. In introducing each problem, the authors give the opinions of experts and often describe current printing practice. Both these items are based on gathering a considerable amount of data either by questionnaire or by studying printed materials. In many of the instances they also secure data on opinions of readers to compare with the experimental results.

The first variable studied is type face, with essentially negative results as among common faces with the exception of Cloister Black and American Typewriter, which are inferior. Readers do have preferences, and the upshot is that the printer can follow the customer's preference without impairing legibility. Studies of size of type, width of line, and leading are made separately, but the reader is urged to suspend judgment until a later chapter which investigates the three simultaneously. This later chapter takes some particular combination as a standard and then simultaneously varies, for example, line width and leading, keeping the size constant. A detailed table is given for each type size, and differences larger than 4% are arbitrarily considered significant and indicated in bold face. Then, by inspecting the light-face entries in the table, "regions of optimal legibility" are formulated.

A problem not reported in previous studies by these authors deals with the spatial arrangement of the page. We find a wide diversity of practice in use of margins, and experimental results show that the margin does not influence legibility. Furthermore, a two-column arrangement is just as legible as a one-column arrangement and could be more economical of paper. It is shown, furthermore, that a single rule between the columns is as effective as leading up to two picas. The authors actually recommend a two-column, no-margin arrangement for general use in magazines and books.

Further chapters indicate the ineffectiveness of white type on black ground, the importance of brightness contrast when using a colored background, and the fact that a glazed surface produces as high legibility as an unglazed, although the readers may think it is harder to read. They conclude with a final experiment in which they set up some optimal type arrangements and then vary one item at a time systematically in order to note the amount of decrease in legibility. They finally conclude that there is a progressively retarding effect on speed of reading as one decreases the size of type, increases the width of line, decreases the amount of lead, changes to Cloister Black, or introduces white on black. Furthermore, they conclude that paper surface is unimportant and leading is of minor importance for long lines except for very small-sized type. A summary chapter contains a tabular summary of recommendations giving in one column the typographical factor, in the next a satisfactory printing ar-

rangement, and in the last an undesirable printing arrangement. Specifications are presented for an ideal printed page.

The appendix gives considerable detail regarding the methodology. This includes the equivalence of the forms of the tests used, an actual description of the test and its construction, the time limit observed. It is shown that the influence of set in changing from one form of type to another is negligible. A control group always took both forms of the test in identical typography at the same time as an experimental group.

The authors answer most of the criticisms that are apt to be raised against their work. They admit that the comparison of two tests, each of which took one and three-fourths minutes, is somewhat of a limitation, but they do point out that they used 33,000 subjects. They are also aware of the fact that the results might be somewhat different in a long period of reading where fatigue might enter.

One thing about the book will annoy the scientific reader, viz., the absence of any indication of the significance of the differences in the text itself. The numerous tables which appear are abbreviated from those published in the original articles, and the critical ratios are omitted. The appendix does list all the tabular material on which the study is based and which may be obtained in microfilm or photo copies from the American Documentation Institute. However, it would seem that even the printer might occasionally wonder why one difference was emphasized and another not. For instance, we read that "American Typewriter is read more slowly" when the table gives a difference of 4.7%. In another place, "a glance at table shows there is no direct relation" although the difference is 6%. If the reader didn't take the trouble to secure the original data, this might be confusing. Aside from the foregoing the reviewer has no adverse criticism of the book. Based as it is on detailed experiments, if the printer follows the recommendations blindly, he will be all right. Psychologists will be glad to have this material all gathered together in one place, although they would prefer to have the more detailed tables in the same volume.

HAROLD E. BURTT.

Ohio State University.

BURROS, O. K. (Ed.) *The 1940 mental measurements yearbook.* Highland Park, N. J.: Mental Measurements Yearbook, 1941. Pp. xxiii + 674.

The volume reviews approximately 325 tests and furnishes titles of nearly 200 others, together with pertinent data as to authorship, cost, date of publication, and grade level for which they are designed. It is limited to tests that have appeared in English-speaking countries. Some tests are reviewed by but a single person; others, by two persons; and still others, by three or four. Quite frequently, reviews that have appeared in psychological and educational journals are reproduced, in whole or in part, in addition to those written especially for the volume. The editor was quite liberal in space allowances. Reviews of from 400 to 500 words are common; some are considerably longer.

The reviews are the work of 250 individuals representing various areas

of specialization. Approximately 75 of these are professors of education, administrators, and elementary and secondary teachers; the various fields of psychology—general, clinical, child, educational—are represented by a like number of reviewers; approximately 40 represent the various academic fields, exclusive of professors of English, mathematics, and the like, who are included in the education group; some 35 or 40 of the reviewers are statisticians, test specialists, directors of bureaus of measurements, and so on. Among the reviewers are 16 from foreign countries. The selection of reviewers for the specific assignments seems to have been especially appropriate. For example, H. E. Garrett, T. L. Kelley, C. Spearman, Godfrey Thomson, and R. C. Tryon appraise the Tests for Primary Mental Abilities; Nancy Bayley, B. M. Castner, Florence Goodenough, and Florence Teagarden, the Merrill-Palmer Scale of Mental Tests.

The following is a typical treatment of a test:

[1299] *Cooperative Literary Comprehension Test*. Grades 9-16; 1935-40; 40-45-minute editions; 25¢ per specimen set; 5¢ per test, 10 to 99 copies; Form Q: M. F. Carpenter and E. F. Lindquist; New York: Cooperative Test Service. . . . Forms O, P, and Q, 1½¢ per machine-scorable answer sheet; 40 (45) minutes.

Reviews follow by Lou LaBrant, professor of English-Education, Ohio State University, and E. A. Tenney, associate professor of English, Cornell University. Citations to two previous reviews (in *The 1938 Yearbook*) are made.

Lists of references frequently follow the titles and descriptive matter of the tests. Some of the references treat research conducted in the interest of validation and use of the tests in question; others are more general in character and may be said to supply information about tests of the kind under treatment. With respect to some of the best-known and most widely used tests the list of references is quite long; for example, for the Revised Stanford-Binet Scale 134 titles are given.

The last 169 pages of the volume are devoted to book reviews as reproduced from various journals. Included in this treatment are textbooks on educational, intelligence, vocational, and personality tests, books in whose content measurement and the results of measurement play an important part, and monographs describing research in the design of which the use of tests is implicated. The reviews that have appeared since 1937 have much the greater representation, although some date back to the early '30's. Of all the features of the volume the book reviews appear to hold the least promise of usefulness.

The volume purports to be up-to-date as of October, 1940. It gives fairly comprehensive coverage of the tests published since the appearance of *The 1938 Yearbook*. An attempt is made to include a representative sampling of tests published prior to 1938. A good many tests reviewed in previous yearbooks are reviewed anew. Although it was probably not feasible even to list by title all of the older tests, the writer feels that a place should have been made for the historic Army Alpha and for some other well-known tests, even at the expense of deleting some of the 147 references to articles on the Rorschach test. The editor tells us that the tests omitted will find their way into subsequent yearbooks.

Something could be said for the reviewing of the best of the older tests rather than the reviewing of a cross-section of them. Perhaps it is the editor's thought that the practice of having all of the tests reviewed ultimately, and ideally several times, in the various *Yearbooks* will serve the purpose of selection. This is not too promising an outcome, since the various tests will be evaluated by persons having different standards and different philosophies. When *A* appraises test *m* and *B* test *n*, the result is a comparison of the reviewers as well as a comparison of the tests.

The scope of the work is indicated by the following division heads: "Achievement Batteries," "Character and Personality," "English," "Fine Arts," "Foreign Languages," "Intelligence," "Mathematics," "Miscellaneous" (business education, home economics, industrial arts, religious education, safety education, etc.), "Reading," "Science," "Social Studies," and "Vocations." A subject index would have added somewhat to the convenience of the user of the volume. One interested in performance tests or tests for the deaf, for example, must look through the entire section on intelligence tests in order to round them up.

A work so ambitious and so well conceived will surely find several kinds of usefulness. The most obvious kind, and the one most frequently claimed for it in the preface and introduction, is its service to test users in the selection of tests. Indeed, the work is styled *a coöperative service to test users*. This objective will be realized in a comparatively small measure if the test user consults the volume only to ascertain what the reviewers have to say about the particular test that he may contemplate using. It should prove to be more serviceable to those who peruse all the reviews of tests of a given variety with the view to gaining a perspective of the tests of that variety, as appraised by test experts, educators, and academicians. A given test may then be evaluated by comparison with other available tests, as reviewed. The test user should evaluate each review in the light of the kind of information the reviewer is best qualified to give, consulting the test expert on matters of sampling, construction, compilation of norms, etc., and the subject-matter specialists—professors and classroom teachers—for information on the adequacy with which a test covers the recognized content of the courses for which it is designed. The writer ventures to predict that the volume will be of greater service to graduate students of the various branches of mental measurement and to the test makers themselves than to those who purchase and administer tests.

Any very useful statement about the quality of the reviews seems to be out of the question, since it would require careful scrutiny of the tests themselves—to say nothing of its being presumptuous. Some who peruse the volume may feel—and justifiably so—that a considerable proportion of the reviews are hypercritical as well as "frankly critical"—a phrase which the editor uses as often as there is the slightest occasion to do so. On the other hand, it is unlikely that anyone, unless he be an avowed enemy of mental measurement, will criticize the volume for its lack of critical quality. The "reviewer's candid opinion of a test's merits and limitations" was asked for and, apparently, received. Whether or not reviews a bit more descriptive and a bit less opinionated would have been gener-

ally more serviceable is a question that may well arise. At any rate, there is a minimum of description.

J. B. STROUD.

State University of Iowa.

MONROE, W. S. (Ed.) *Encyclopedia of educational research*. New York: Macmillan, 1941. Pp. xxiii + 1344.

This one-volume encyclopedia was prepared under the auspices of the American Educational Research Association. The entries consist chiefly of short, signed articles summarizing current research, suggesting further work which is needed. Each is followed by a selected bibliography of reviews, yearbooks, original contributions, varying from a few titles to as many as 300. The authors have in most cases made scholarly contributions within the field of the assigned topic.

While the biographical and purely historical statements, common to general encyclopedias, have been omitted, a few unsigned descriptive statements are included. These refer primarily to statistical terms and concepts, prepared by the editor with the advice of Dr. Helen M. Walker. These reflect the preferred current practices and should prove helpful.

Among the many topics of general interest to psychologists, the following may be pointed out as representative: adult intelligence (F. L. Ruch); attitudes (R. Stagner); atypical children—gifted (D. E. Norris, N. I. Noonan), mental defectives (J. W. W. Wallin), delinquents (C. M. Louttit), physically handicapped (S. G. Crayton); character education (W. C. Olson); child development, seventeen articles under the general editorship of F. N. Freeman (H. S. Conrad, B. L. Wellman, K. C. Pratt, H. D. Carter, N. W. Shock, M. Shirley, D. McCarthy, F. L. Goodenough, M. W. Curti, J. E. Anderson, H. Easley, V. Jones, H. L. Koch, M. C. Jones, H. E. Jones); colleges and universities, student personnel work, twenty articles under the editorship of E. G. Williamson and T. R. Sarbin (F. F. Bradshaw, D. D. Feder, A. E. Traxler, M. E. Bennett, J. G. Darley, C. G. Wrenn, A. J. Brumbaugh, H. M. Bell, R. Hoppock, A. Pavian, G. C. Schneidler, D. G. Paterson, J. D. Beatty, H. W. Bailey, T. Raphael, R. Boynton, E. M. Lloyd-Jones, D. H. Gardner, R. T. Sharpe, H. Hayes, T. W. Merriam); handedness (N. V. Scheidemann); higher mental processes (W. Reitz); individual differences (G. Hildreth); intelligence (P. L. Boynton); leadership (L. D. Zeleny); learning (A. W. Melton); mental hygiene (F. Redl); motivation (P. T. Young); nature and nurture (G. C. Schwesinger); personality (W. C. Olson); prognosis (A. C. Eurich, L. F. Cain); psychology of religion (E. D. Starbuck); racial differences (T. R. Garth); sex differences (C. C. Miles); speech pathology (L. E. Travis); tests, achievement (W. W. Cook); transfer of training (P. Sandiford).

Because of the large quantity of material, any attempt to characterize particular contributions involves arbitrary selection. The series of articles mentioned in the list above, one on child development, the other on college and university personnel problems, are worthy of special mention. Reitz's discussion of higher mental processes, while too heavily loaded with classificatory schemes and neglectful of American sources, gives an

introduction to German writings less familiar in this country, e.g. the contributions of Blumenfeld, Höningwald, Selz, and others. The section on leadership, by L. D. Zeleny, includes the application of Moreno's sociometric techniques to school situations. Olson's treatment of personality includes material on "split growth" coming out of his own researches, as yet little accessible in published form. Melton discusses learning from a "dimensional" or "relativity" standpoint. His closely reasoned discussion is supported by 136 references. While the section will probably appeal more strongly to the psychologist than to the teacher, there is a concluding portion on educational implications which states well the necessity for an articulation between the psychology of learning and educational practices, and points out the difficulties therein.

In addition to the portions of general psychological interest, many other sections will be useful to teachers of educational psychology, now often too little acquainted with the literature on school practices. Sections on special school subjects, on curriculum, on evaluation, record systems, remedial practices, teacher personnel, the statistics of school populations, relation of school to community, all will find their uses.

ERNEST R. HILGARD.

Stanford University.

ANSBACHER, H. L. (Ed.) *Psychological Index*—Abstract references of Volumes 1-25, 1894-1918; Volumes 26-35, 1919-1928. (The American Psychological Association, Inc., in coöperation with the Works Projects Administration of the City of New York.) 1940; 1941. Pp. 178; ix + 241.

As early as 1933 the present reviewer formulated plans for a cumulated subject index to the *Psychological Index* and after conference with a number of psychologists submitted the plans to the American Psychological Association. At the New York meeting in 1934 the Council discussed the proposals, but because of the apparent magnitude of the task took no action. In 1937 Dr. A. T. Poffenberger, who had been most cordial with respect to the plan, was able to secure support from the Works Progress Administration of New York City. Because of the unsatisfactoriness of indexing from titles alone, search was made for published abstracts of entries in the *Index*, or original abstracts were written.

The present volumes list, with finding references, some 75,000 abstracts of 45,500 titles, or 43% of the titles included in Volumes 1 to 35 of the *Psychological Index*. Because of time and financial limitations, abstracts were searched for in only 25 different journals. In the first volume the 23 journals searched include 5 in psychology, 8 in psychiatry and neurology, 6 in biology and physiology, 1 in philosophy, 1 in pedagogy, and 2 in sociology. The second volume covers only 11 journals, of which 3 are psychology, 3 psychiatry, and 5 biology and physiology. The fewer number of journals in the second volume is justified because, for 6 of the 10 years covered, abstracts were regularly published in the *Psychological Bulletin* and *Psychological Abstracts*. The extent of coverage in special fields varies widely. As a sample, Volumes 4 and 17 of the *Psychological Index* were checked. In each of these for the areas of social, child, genetic, in-

dividual, and educational psychology the percentage of titles for which abstracts were found is from 10 to 30% below the average percentage for the respective volume. Contrariwise, anatomy and physiology of the nervous system and abnormal psychology exceed the volume averages by similar amounts. This variation is due, of course, to the types of journals searched. It is unfortunate that the *Pedagogical Seminary* and the *Psychological Review* were not included during the earlier years.

Except for the inequalities of coverage, for which, perhaps, there should not be too much criticism, these volumes are a very valuable addition to the bibliographical tools of psychology. The arrangement of entries by *Psychological Index* volume and entry number is the most satisfactory for ease in using the volumes. There are surprisingly few typographical errors in the complex tabular matter, and none of those noticed would be confusing or misleading.

Dr. Ansbacher and his co-workers, the Works Progress Administration, and the American Psychological Association are to be commended for bringing this "incidental step" to successful publication. It is to be hoped that the major task—a cumulative subject index to the *Psychological Index*—will also soon be made available.

C. M. LOUTTIT.

Indiana University.

THORPE, L. P., assisted by J. N. Holliday. Personality and life: a practical guide to personality improvement. New York: Longmans, Green, 1941. Pp. xiii + 266.

As its subtitle suggests, Dr. Thorpe's book is a "service" book, concerned primarily with practical procedures for personality adjustment. Beginning with the thesis that a well-adjusted personality results from a balanced satisfaction of motives, Thorpe outlines three basic types of human motives: (1) physical drives, such as hunger, thirst, and the elimination of fatigue, pain, and extremes of temperature; (2) "ego-motives," or the need for personal recognition, self-expression, and the realization of personal ambition; (3) "social motives," or the need to nurture and care for other members of society by offering them recognition, sympathy, and generous service. The author seems to be cognizant of the fact that the two latter groups of motives cannot be regarded as innate, pointing out that they are probably learned early in life. According to the author, "nervous" symptoms and neuroses develop from a failure to achieve a proper balance of these motives. The importance of early home training in the development of properly balanced attitudes is emphasized.

Under the heading of "psychological drugs" are discussed rationalization, daydreaming, and compensation, as well as religious cults, character reading systems, and a number of common devices for self-pampering. Although admitting that the moderate use of such techniques may give temporary relief in certain difficult situations, Thorpe maintains that the well-balanced personality needs no such "drugs."

A specific program for personality improvement is outlined in the following steps: (1) recognition of qualities desired; (2) positive thinking in terms of the successful achievement of the goal; (3) learning by doing the

specific things that constitute a desirable personality. Specific qualities to cultivate and common annoyances to avoid in getting along with people are discussed, supporting data being cited from lists collected by Ruch, Cason, Laird, and others. The author repeatedly emphasizes the point, however, that such devices are not to be regarded as a "bag of tricks" for winning friends, but should spring from a genuine expression of the "social motives." Among the methods discussed for the treatment of neurotics are: (1) psychological instruction and the planning of a specific course of action to be followed; (2) oral suggestion, especially when combined with relaxation; (3) "unconditioning"; (4) general muscular relaxation; (5) negative practice (referring to Dunlap's Beta hypothesis); (6) environmental control, or the elimination of specific disturbing stimuli.

The book is liberally illustrated with case histories selected from the author's clinical experience. A few experimental results are also cited informally, but there is no systematic presentation of data in support of the author's assertions. The serious student who looks for a critical report of relevant investigations will be disappointed. In such a book, however, one should perhaps be thankful for small favors. The author uses his facts only as springboards for his practical suggestions; but if he sometimes ventures a leap in the dark, the initial facts, at least, are sound enough. The book, furthermore, dispels a number of popular fallacies, such as "instincts" and the inheritance of personality traits, sharp typological classification of individuals into introverts and extroverts, and many of the claims of cultists and "psychological swindlers." Because of its nontechnical style and practical appeal, the book will undoubtedly reach a wider lay public and will thereby be more effective in counteracting pseudopsychological "success books."

ANNE ANASTASI.

Queens College.

CARLSON, E. R. *Born that way*. New York: John Day, 1941. Pp. ix + 174.

Earl Carlson suffered a brain injury during birth which resulted in severe spasticity and athetosis. This autobiography is an account of his development from a child unable to walk at the age of four years into a practicing physician and internationally known specialist in the treatment of infantile cerebral palsy. Dr. Carlson received his medical degree from Yale and was subsequently connected with the New York Neurological Institute, where he established a clinic for spastics which has attracted widespread attention.

The process of the development of muscular coördination in the spastic is described in some detail. The psychologist will be interested in Carlson's incidental discussion of the effect of emotion, alcohol, over-stimulation, and purpose on the muscular coördination of the spastic child. In view of the spastic's motor incoördination, somewhat surprising emphasis is placed on the role of motor learning: "I could remember only the facts to which I had given motor representation . . . ; the other ideas had slipped out of my head. . . . Achieving motor representation of ideas is an important factor in the education of the (spastic)."

The clinical psychologist will be particularly interested in the book as a case history of reaction to a physical disability. Carlson's story deserves a place beside those of Laura Bridgman and Helen Keller as an example of a successful solution to the "Adlerian problem." There is a useful description of the various types of muscular disorder found in cerebral palsy and a number of practical suggestions for the training of children thus afflicted.

CHARLES R. STROTHER.

State University of Iowa.

LENNOX, W. G. *Science and seizures.* New York: Hoeber, 1941. Pp. viii +258.

The purpose of this book has been that of enlightening practicing physicians, nurses, and laymen on the recent advances in the study and treatment of the ideopathic and symptomatic epilepsies. By virtue of this aim much of the information, presented in compact summaries, is useful to the psychologist who is often queried on these problems. The volume should also prove of value to those who instruct in the fields of abnormal and clinical psychology.

Dr. Lennox, an active investigator in the field and a physician who treats epileptic patients, first deals straightforwardly with the history of the subject and, second, with the recent advances made in the study, diagnosis, and treatment of the epilepsies. Psychotherapeutic aspects, as remedial and preventive agents, are discussed in some detail. Considerable space is devoted to a discussion of the existence and nature of abnormal electroencephalograms recorded in the study of many epileptic cases as well as those waves recorded during the study of close relatives of these patients. Reviews of the experimental literature lead Dr. Lennox to the conclusion that the well-nigh universal cerebral dysrhythmia present in patients with seizures and present in close relatives is transmitted from one generation to the next by means of as yet unspecified hereditary mechanisms. Concerning the causal factors of these psychicochemical reactions in the brain cortex Lennox does not speculate. Only brief mention is made of the recent studies dealing with the abnormal carbon dioxide content of arterial and venous blood in epileptic patients suffering from petit mal and grand mal seizures. A summary chapter is offered on the methods used in the treatment of essential and symptomatic forms of the seizures. This section includes a discussion of the administration of dilantin sodium (sodium diphenyl hydantoinate) by Merritt and Putnam. The last 60 pages are given over to a discussion, parallel in form of presentation to the above, on what is known today concerning migraine or "sick headaches." The psychotherapeutic aspects are stressed. A short list of references on the problems of epilepsy and migraine is appended.

An evaluation of the book must rest solely upon the aims stated by the author. In the opinion of the reviewer the aims of the volume have been admirably met. This is not to state, however, that the book answers more questions than it raises. Dr. Lennox informs his readers, it is to be noted, that a text suitable for the technician is in preparation. The chief

values which accrue from a study of this volume by the psychologist appear to lie in (1) its compact presentation of what is known about epilepsies and migraine; (2) its emphasis upon the need for general enlightenment by way of education broadly conceived; (3) the existence of a non-technical reference source to which students and laymen may be referred. As a relatively nontechnical survey of epilepsy and migraine the volume adequately serves the purposes for which it has been written.

L. A. PENNINGTON.

University of Illinois.

ROSENFIELD, L. C. *From beast-machine to man-machine: animal soul in French letters from Descartes to La Mettrie.* (With a Preface by P. Hazard of the Académie française.) New York: Oxford Univ. Press, 1941. Pp. xxviii + 353.

Since the title of the present volume (apparently a Columbia University doctoral dissertation) is sufficiently informing as to content, we need only add a few items concerning scope and viewpoint. An index to the former may be found in the more than 30-page bibliography, which includes a few recent psychological items. This imposing list indicates the trail followed by the author in delineating the controversy centering about the Cartesian idea of animal mechanism. Among the Cartesians are numbered physiologists, philosophers, theologians, and poets. The opponents are classified as traditionalists, empiricists, and anti-automatistic poets.

The viewpoint is effectively suggested by the author's remark in the prologue:

From time immemorial man has been fascinated by the riddle of animal behavior. Gazing into the eyes of a cherished pet, animal lovers forever wonder wherein his soul differs from theirs.

The following appears in the epilogue:

We can no more logically or experimentally disprove the thesis of the beast-machine than we can experimentally or logically prove the converse.

Despite the author's popular and mystical approach, the animal psychologist concerned with the history of ideas can find much to interest him in the narrative, notes, and bibliography. Not only does the author treat such famous men of the period as Descartes, Malebranche, Locke, La Mettrie, etc., but, as Professor Hazard writes in the preface, she has also unearthed a legion of obscure writers.

J. R. KANTOR.

Indiana University.

HOLLINGWORTH, L. S. *Public addresses.* Lancaster, Pa.: Science Press, 1940. Pp. 148.

Professor Harry L. Hollingworth has placed psychologists and educators in his debt by bringing together these twenty-three manuscripts left by the late Professor Leta S. Hollingworth. Sixteen among them are public addresses, three are radio addresses, and four are memoranda, all

dated during the period 1931-1939. They range over such subjects as "Who Should Direct the Behavior Clinic?"—treated with admirable fairness and balance; "How to Keep From Becoming an Old Fogey"—an address understandably called for on more than one occasion; adolescence; and the characteristics and education of the gifted.

Knowing Dr. Hollingworth's concern for gifted children, one would expect that her public statements would frequently deal with them. One is not disappointed. In addition to such addresses as those on the creative work of the gifted and "Old Heads on Young Shoulders" there are her delightful reminiscences of events leading to the creation of the Speyer School as a laboratory school for the education of exceptional children.

These addresses and memoranda are clear, straightforward, filled with concrete illustration, and characterized by mature common sense as well as by mature scholarship. The foreword, by Harry L. Hollingworth, is an excellent introduction to them.

JOHN A. McGEOCH.

State University of Iowa.

BOOKS AND MATERIALS RECEIVED

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ANSBACHER, H. L. (Ed.) *Psychological Index*—Abstract references of Volumes 1-25, 1894-1918; Volumes 26-35, 1919-1928. (The American Psychological Association, Inc., in coöperation with the Work Projects Administration of the City of New York.) 1940; 1941. Pp. 178; ix+241.

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BABCOCK, H. Time and the mind: personal tempo—the key to normal and pathological mental conditions. Cambridge, Mass.: Sci-Art, 1941. Pp. 304.

BARTLEY, S. H. Vision: a study of its basis. (With an historical perspective by E. G. Boring.) New York: Van Nostrand, 1941. Pp. xv+350.

BRITT, S. H. Social psychology of modern life. New York: Farrar & Rinehart, 1941. Pp. xviii+562.

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CLEETON, G. U. Studies in the psychology of vocational adjustment. Pittsburgh: Carnegie Institute of Technology, 1940. Pp. 28.

DARLEY, J. G., & BERDIE, R. F. The fields of personnel work. (American Job Series, *Occup. Monogr.*, No. 20.) Chicago: Science Research Associates, 1941. Pp. 48.

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LENNOX, W. G. Science and seizures. New York: Hoeber, 1941. Pp. viii+258.

LUCK, J. M. (Ed.), & HALL, V. E. (Assoc. Ed.) Annual review of physiology. (Vol. III.) Stanford Univ.: American Physiological Society & Annual Reviews, 1941. Pp. viii+784.

LUNDHOLM, H. The aesthetic sentiment: a criticism and an original excursion. Cambridge, Mass.: Sci-Art, 1941. Pp. 223.

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MOFFIE, D. J. A non-verbal approach to the Thurstone primary mental abilities. (Abstract of Ph. D. Thesis, Pennsylvania State College, 1940.) Ann Arbor: Univ. Microfilms, 1941.

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MÜLLER, W. Die Grundlagen der Moral im Spiegel des absoluten Weltbildes. München: Ernst Reinhardt, Isabellastrasse, 11, 1939. Pp. 31.

MÜLLER, W. Genie und Talent: über das Ethos im Kunstwerk. München: Ernst Reinhardt, Isabellastrasse, 11, 1940. Pp. 49.

PETERS, C. C., & VAN VOORHIS, W. R. Statistical procedures and their mathematical bases. New York: McGraw-Hill, 1940. Pp. xiii+516.

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SEASHORE, C. E. Why we love music. Philadelphia: Ditson, 1941. Pp. vi+82.

SHERMAN, M. Basic problems of behavior. New York: Longmans, Green, 1941. Pp. viii+440.

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child development and modern education. New York: Macmillan, 1941. Pp. xii+522.

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TRAVIS, L. E., & BARUCH, D. W. Personal problems of everyday life: practical aspects of mental hygiene. (Student's ed.) New York: Appleton-Century, 1941. Pp. xv+421.

VALENTINE, W. L. Experimental foundations of general psychology. (Rev. ed.) New York: Farrar & Rinehart, 1941. Pp. xvi+432.

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WOOD, L. The analysis of knowledge. Princeton: Princeton Univ. Press, 1941. Pp. 263.

WOODWORTH, R. S. Heredity and environment: a critical survey of recently published material on twins and foster children. (A report prepared for the Committee on Social Adjustment.) New York: Social Science Research Council, 1941. Pp. x+95.

NOTES AND NEWS

DR. ROSWELL P. ANGIER, chairman of the department of psychology and associate dean of the Graduate School of Yale University, has retired after 35 years as a member of the staff.

DR. CLARENCE H. GRAHAM has been promoted from associate professor to professor of psychology at Brown University.

DR. JERRY W. CARTER, JR., assumed the directorship of the Wichita Child Guidance Center on April 1, following the retirement of Dr. Edwina A. Cowan, who has held the directorship of this clinic for the past 10 years.

DR. MORTON A. SEIDENFELD, chief of the psychological section at the Recruit Reception Center at Fort Sheridan, Illinois, has been promoted from the rank of Captain to that of Major.

DR. C. WILLIAM HUNTLEY has been elected dean of Adelbert College of Western Reserve University and has been promoted to an assistant professorship in psychology.

A portrait of the late Professor Edward B. Titchener, formerly professor of psychology at Cornell University, has been hung in the Laboratory of Psychology, which he founded. The portrait was painted by Professor Christian Midjo and was presented to the university by Mrs. Titchener.—*Science*.

DR. WILLIAM H. BURNHAM, for many years professor of education at Clark University and last remaining member of the original G. Stanley Hall group, died on June 25 at the age of 85 years. Dr. Burnham was one of the 31 original members of the American Psychological Association.

THE death is announced of Dr. F. A. P. Aveling, professor of psychology at King's College, the University of London, at the age of 65 years.—*Science*.

DR. KARL BÜHLER and Dr. Charlotte Bühler, formerly of the University of Vienna, have accepted appointments at Clark University as visiting professors of psychology for the current semester. Dr. Karl Bühler is giving three courses in the field of genetic psychology, and Dr. Charlotte Bühler is offering instruction in clinical child psychology. During the semester special plans will be made for psychologists in the eastern part of the country to visit the laboratories and hold conferences with these eminent visiting scholars.

THEODORE R. SARBIN (Ph.D. Ohio State), who has been connected with the University of Minnesota for the past three years, has been granted a postdoctoral research training fellowship by the Social Science Research Council, spending a year in the study of psychiatric and psycho-

analytic methods with the idea of adapting them to research problems in social psychology. He will study at the Chicago Institute for Psychoanalysis, the Psychiatric Division of Billings Hospital of the University of Chicago, the Psychiatric Institute of the Illinois Medical School, and elsewhere.

ON April 25, at the annual general meeting of the American Philosophical Society, held in Philadelphia, there was a symposium on "Recent Advances in Psychology." Speakers and subjects were as follows: Dr. Karl S. Lashley, Harvard University—"Correlated Developments in Neurology and Psychology"; Dr. Arnold Gesell, Yale Graduate School—"The Genesis of Behavior Form in Fetus and Infant"; Dr. Edward L. Thorndike, Teachers College, Columbia University—"Mental Abilities"; Dr. Wolfgang Köhler, Swarthmore College—"The Nature of Associations"; Dr. Carney Landis, New York State Psychiatric Institute and Hospital—"Psychoanalysis and Scientific Method"; and Dr. Robert M. Yerkes, Yale School of Medicine—"Psychology and Defense." In the evening the Penrose Memorial Lecture was delivered by Dr. Edward C. Tolman, University of California, who spoke on "Motivation, Learning, and Adjustment."

A Conference on Mental Health in Later Maturity was held on May 23 and 24 in the auditorium of the U. S. Public Health Service in Washington, D. C. In addition to the physicians and others, the following psychologists participated in the program: Dr. Walter R. Miles—"Performance in Relation to Age"; Dr. David Wechsler—"Intellectual Changes With Age" (discussion opened by Dr. David Shakow); Dr. George Lawton—"Psychological Guidance to Older Persons" (discussion opened by Dr. Otto Klineberg); Dr. Leonard Carmichael—"The Value of the Older Mind in National Defense"; Dr. Edgar A. Doll, "Measurement of Social Maturity Applied to Older People" (discussion opened by Dr. Carney Landis).

THE Washington-Baltimore branch of the American Psychological Association held its third meeting of the academic year at the Catholic University of America, Washington, D. C., on March 27, 1941. Papers were presented by: Dr. Arthur Weissman, Dr. Mayhew Derryberry, and Dr. Edmund C. Hammond, all of the U. S. Public Health Service.

The fourth meeting of the year was held at the University of Maryland College Park, Maryland, on May 15, 1941. Papers were presented by: Dr. Roger M. Bellows, University of Maryland; Col. Walter V. Bingham; and Dr. John G. Jenkins, University of Maryland. The following officers were elected: President—Dr. Vernon P. Scheidt, Waverly Press; Vice-President—Dr. Wendell W. Cruze, Wilson Teachers College; Secretary—Dr. Roger M. Bellows, University of Maryland; Treasurer—Mrs. Mildred St. Martin Percy, District of Columbia Public Schools.

THE decennial celebration of the Bureau of Child Guidance, Board of Education, New York City, will take place on October 18, 1941, at the Waldorf Astoria Hotel. There will be a morning of panel discussions fol-

lowed by a luncheon. Topics to be discussed include the General Field of Guidance, Learning Difficulties, the Adolescent, the Problem Child, the Exceptional Child, and the Young Delinquent.

As a result of extensive alterations in the psychological laboratory of the City College, New York City, the space of over an entire floor has now been made available. This space has been utilized to provide: a large, well-equipped shop; 18 research cubicles, enclosed and ventilated; 2 photographic rooms, a preparation room and a darkroom; a psychosomatic laboratory consisting of 8 rooms; a low-oxygen and refrigeration chamber; a comparative laboratory and vivarium; a recording room; a psychometric laboratory for calculating machines, drawing materials necessary for manuscript preparation, and extensive files of paper-and-pencil psychological tests; 2 apparatus storerooms; 7 offices; 4 classrooms; and a demonstration preparation room. The expansion of the psychology department has been supplemented by a special fund for new apparatus. In addition, the Josiah Macy, Jr., Foundation has made available to Professor Gardner Murphy and Dr. Joseph E. Barmack \$1000 and medical supervision for research connected with the defense program.

As an outgrowth of a special conference called by the Committee on Instruction of the American Association for Applied Psychology at Atlantic City in February to discuss instruction in psychology on the high school and junior college level, a Committee on Psychology in Junior Colleges has recently been appointed, with Dr. Louise Omwake, of Centenary Junior College, Hackettstown, New Jersey, acting as Chairman. The Committee will concentrate its work especially on the various phases of applied psychology and will report its progress at the annual meeting of the American Association of Junior Colleges in February, 1942.

DR. MAX SIMONEIT, director of German military psychology, announced in the May, 1940, issue of *Soldatentum* that there were last spring 25 unfilled positions in the army section of military psychology alone and that an extraordinary demand for psychologists was expected in the near future from the aviation (*Luftwaffe*) section. The German military psychology staff numbered 200 before the war.

THE Association for the Advancement of Psychoanalysis, founded in May of this year by a group of psychiatrists in New York City, with six charter members from other cities, has announced a training program for the coming year which will be carried out through the American Institute for Psychoanalysis. Psychologists will be particularly interested in the evening lectures and seminars on fundamental problems in psychoanalysis and the relation between personality and society. Information about courses to be offered may be obtained from Dr. Harold Kelman, Secretary, 1230 Park Avenue, New York City.

THE University Extension Division of the Department of Education, Commonwealth of Massachusetts, is offering a course this fall in Psychology for National Defense, given by Dr. A. A. Roback. The course will include such topics as Enlightenment Against Propaganda and Mass Hys-

teria; Mental Attitude in Preparedness and Appeasement; Morale; Motivation; Know the Enemy; Problems of Aviation, Re-education, Fatigue, and War Neuroses. The Military Psychology issue of the *Psychological Bulletin*, the *Bibliography on German military psychology*, and *Confession of a nation* will be used as texts and reference work.

THE National Association for Nursery Education will hold its biennial conference on October 24 through 27 at the Book-Cadillac Hotel, Detroit. Discussion topics of special interest to psychologists will be: Implications of Research Findings in Motor-Socio-Emotional Development; Understanding the 'Deep' and 'Normal' Problems of Young Children Through the Contributions of Research; What Should the Concept of Total Growth Mean to Those Working With Young Children?; and Nursery Education as a Force in the Continuous Growth Process.

THE Tenth Educational Conference will be held on October 30 and 31 at the Hotel Biltmore in New York City. This conference is sponsored by the Educational Records Bureau, the Coöperative Test Service, the Committee on Measurement and Guidance of the American Council on Education, and the Commission on the Relation of School and College of the Progressive Education Association.

Synological Problems



